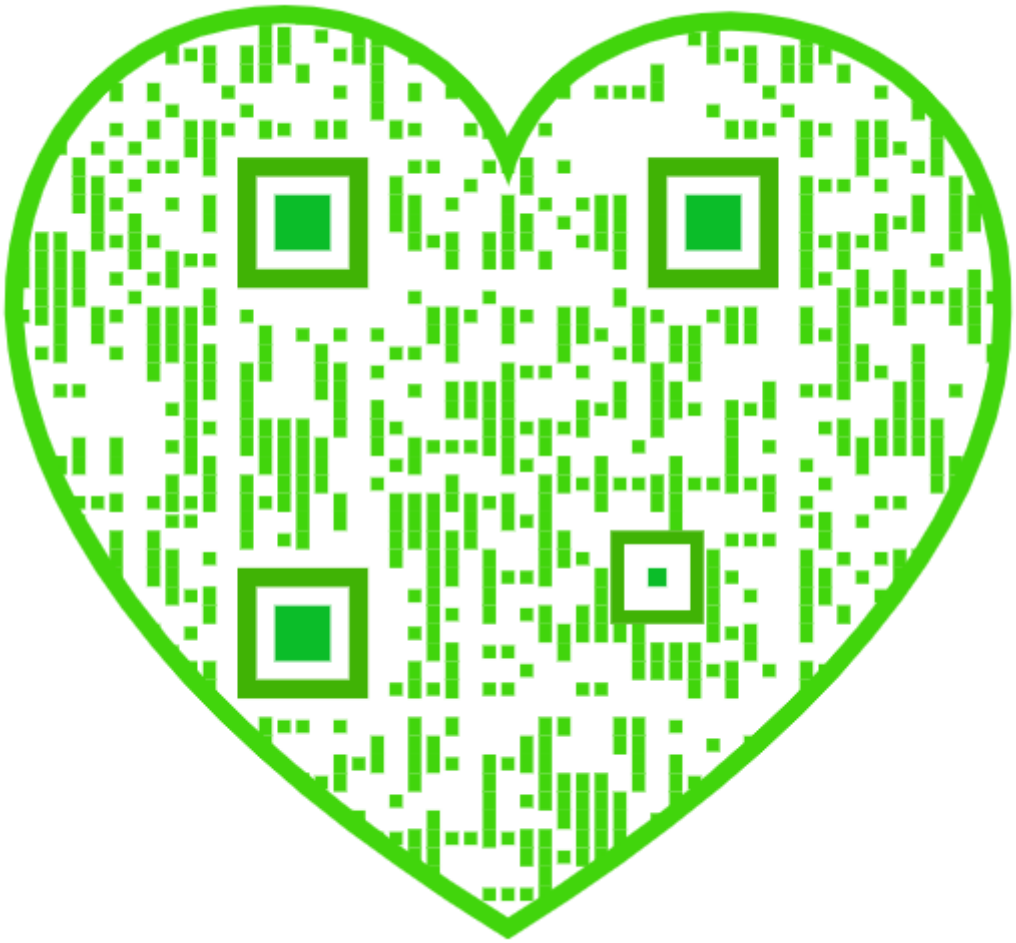

GENERAL FISCAL AND OTHER AFFAIRS.

FORMING ONE OF THE TWELVE VOLUMES OF THE REVISED AND ENLARGED EDITION OF

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THE SCIENCE OF RAILWAYS.

BY
MARSHALL M. KIRKMAN.

GENERAL FISCAL AND OTHER AFFAIRS

TREATS OF MATTERS THAT CONCERN THE ACCOUNTING AND TREASURY DEPARTMENTS OF RAILROADS, THE ORGANIZATION AND AUDITING OF ACCOUNTS, RETURNS, STATISTICS, CLASSIFICATIONS AND DIVISIONS OF EARNINGS AND EXPENSES, BOOKKEEPING, ACCOUNTING, PAYMENT OF EMPLOYES AND OTHER TREASURY MATTERS, RELIEF FUNDS, PENSIONS, FORMS, ETC.

VOLUME X.

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GENERAL FISCAL AND OTHER AFFAIRS.

INTRODUCTION.

While this volume relates in the main to fiscal affairs of railroads, it discusses other questions, some of which enter incidentally into this branch of the subject.

There is no specific thing connected with the operation of railroads, no matter how unimportant, that is not governed by collateral questions and local considerations, and an understanding of one is necessary to an understanding of the other —oftentimes the key. In discussing a particular subject we refer to others, and in these incidental references lie the bulk of the secrets of railway administration. This volume divides itself naturally into books, treating generally and specifically of the fiscal affairs of railroads: the auditing of accounts, returns, statistics, classification and division of earnings and expenses, bookkeeping, accounting, the payment of employes, other treasury matters, relief funds, pensions, forms, etc.

I do not offer what I have to say, it will be understood by the reader, with the thought that it

will throw valuable light on the subject to those whose duties make them familiar with these branches of railway science. I write rather for others not possessing such avenues of information, yet who desire to inform themselves with some particularity on the subject as a necessary and important part of their railway education.

BOOK I.

GENERAL FISCAL AFFAIRS.

CHAPTER I.

POLITICAL AND BUSINESS METHODS.

The disposition to better that which exists is a noticeable trait in the management of railroads, and it is to this spirit we owe the improvements that attend their operation. It at once heightens their efficiency and lessens the cost of their working. Every luxury that the traveling public enjoys is due to it, and while it is perhaps true that these luxuries are sometimes hardly warranted by the income of the properties, they are, in the main, judicious and to be commended for the enterprise they evince.

It is a common belief that greater improvements have been made in the operation of railroads in the United States than elsewhere. Change is a characteristic of our people. It is noticeable both in their commercial and political action, more especially the latter. In this they have been constant in hoping that it would better their condition; would bring them some new blessing.

Shrewd beyond measure in other matters, we have too often been the victims of political hysteria; of cerebral exaltation or epilepsy of the nerves; of what machinists would call "foaming" of the blood!

The knowledge that many, undoubtedly a majority, of the changes wrought in our political practices have not been betterments, has not deterred us from making others at random. The apparent purpose of our political existence, in many things, has been to revivify old and exploded sophisms: to encourage experimentalists. The latter flatter our vanity by making us believe we are better and wiser than other people: silly delusion. We have loved to pose; to grow sentimental; to recount; to look out of the corner of our eye at the Samaritan across the way. God having blessed us with a vast and fertile country, greatly in excess of our present wants, we have ascribed its benefits to our local devices, and our egotism has been so monstrous that the Almighty has oftentimes stood obscured in its shadow.

Indifferent to the traditions and practices of mankind, we have obstinately run counter to the teachings of history. Having made the poorest in experience and moral worth the political equals of our agricultural class and the merchants, traders and philosophers of the land, we glorify the transaction as the acme of political wisdom. Great has been the power of Gush among us.

We have lived in an atmosphere of expectation, attaching throughout our political existence undue value to mere forms and catch words. so that every new nostrum has been received with Howls of delight! But this is less the

case now than formerly. Hard usage is telling upon our credulity. We are becoming weary and less impressionable.

The belief grows that many of the theories of government we have encouraged would be atrocious if not redeemed by the simple, ignorant trust of those who instituted them. In escaping the exaltation of King and Noble we have too often exalted others less worthy, and in doing so have sacrificed stable, honest government to political fantasies.

These excesses, and others yet more hideous, dimly perceived, begin to dull the appetite. Our political vivacity, if not gone, is fading away while our eye is leaden and sorrowful. Good patriots are no longer concerned in making Advances: they no longer seek to extend new boons, but to recover those thanklessly bestowed. While hailing the companionship of those politically fit, they are no longer interested in rescuing the downtrodden of other nations: no longer welcome with wild acclaim the stained and unwashed to the political couch.

We no longer believe the "ketch as ketch can" form of government the best in the world.

In making these comments, I do not criticise our people. They are above criticism. Influences that corrupt government are, however, legitimate subjects of denunciation. The theory that the Improvident, the Worthless and the Vicious may be admitted as equal partners and participants in a great enterprise like that of

governing is wrong in conception and has been time and again proven atrocious in practice.

The rulers of a country are its agents. In order to govern wisely they must possess qualities that fit men to exercise offices of trust. Their selection demands the highest discernment. Only those who have evinced capacity and honesty in their own lives are fit to represent the people in the people's offices.

The carrying on of government is a business (albeit a great and peculiar one), and in mechanical things must be treated as a business wherein the agent is not only required not to steal or misuse the property of his principals, but to protect and advance their interests in every manner consistent with honest practices. Such an agent must manifestly be selected by those who have some incentive to choose fit men; by those who have something tangible to lose by maladministration. This the dullest may perceive. Selection should be restricted to those whose daily life teaches them moderation and the exercise of good judgment.

The safety and perpetuity of our government will finally rest in the conservatism and peculiar aptitude for self government of our race. Of this there can be no doubt.

Some of the changes in railway method and management, like our political changes, have been retrogressive. These changes, however, have not been numerous. Where sources of information are obscure, as they necessarily are in great

enterprises, it is oftentimes difficult to determine at the time whether a change is an improvement or not. Where simple assertion possesses the effect of fact, as it sometimes does in corporate affairs, fiction is, for the moment, reality, and faith a necessity. We believe or we do not believe simply because we are told to believe or disbelieve; man's utterances are Delphic, and the credulity of his listener boundless. He believes because he dare not disbelieve. It does not follow, however, by any means, that he is misled intentionally. He is the victim of a mistaken enthusiast more often than of an intentional prevaricator. Such is the world, not specifically, but generally, and it is in such an atmosphere that business reputations are made and unmade.

CHAPTER II.

THE STATISTICIAN.

The statistician comes after the harvest. He succeeds the crops. His life is passed in the stubble, amidst limp, frost-bitten vines. It is his office to recount the rich man's exploits on the outskirts of the crowd. He is an oracle and delver in details. His sky is dull and leaden. All seasons are alike to him. The traits he has in common with the worldlings of life are his weaknesses. These, however, are mere infinitesimal specks, so to speak.

We search in vain for any mention of the statistician in our directories. Strange omission! Where shall we look for him, what cover lift; what mask pluck off? He lives under a *nom de plume*. His titles are as multitudinous as the stars, and his costumes as shifting as the clouds. He occupies himself with everything, even the infinite. He weighs the earth, calculates its atmosphere and waters, and going further, measures the universe and computes its vast distances. He records the providences of mankind; when rain fell and its duration and quantity; takes account of the storms that have rocked the globe, their date, damage and duration; he notes the thermometer at sunrise, at midday and in the silent

watches of the night; his signboard records all the phenomena of life, the direction of the winds, their velocity and counter currents; the action of the frost and its earliest and latest visits; the lives of animals, the years they live, their diseases and taking off; the productions of countries, their consumption, surpluses and deficits. Population, wealth, politics, disease and death are open books to him. We search in vain for a crevice in his armor; he is invulnerable.

Every great statistician has a hobby, the elucidation of which is the purpose of his life. His thirst for facts is unappeasable; his patience inexhaustible; his industry limitless.

Like most men devoted to an idea, the statistician lacks imagination. He knows that the universe is made up of infinitesimal molecules. He is, therefore, infinitesimal. He distrusts things that cannot be demonstrated; the emanations of genius alarm him; man's restlessness fills him with forebodings. He discovers sinister meanings therein. Happily he is not superstitious; the creaking of the trees, the sighing of the wind, the flying clouds, foretell to him only practical things. Mankind is, in his estimation, an abstraction merely; man, an interrogation point; epochs, hyperbolical entities. There is no speculation in his eye. Laughter irritates and folly chills him.

Cassius was a statistician.

The ironlike circumstances of the statistician's life benumb him. He is a man at the bottom of a crevasse; its sides muffle his voice, its gloom

dims his eyes, the cold chills his blood and paralyzes his limbs; its impassable heights emasculate him. He passes his life amidst the graves of the departed. He delves in the past and feels the warmth of the sun only at dusk when noxious gases abound. To him the earth is cold and damp, the grasses wet, the trees bedimmed with tears.

His days are passed in contemplating figures; his nights in arithmetical dreams. His contracted chest and sunken abdomen indicate dyspepsia; his sallow complexion, cold hands and still colder feet, sedentary habits and a defective circulation. His constrained manners bespeak the recluse. This is the statistician. The world has nothing in common with him and accepts his statements only to gabble aimlessly about them for a moment and pass on.

He is without personal influence; the world tolerates him—that is all! When he goes abroad he seeks by choice byways and unfrequented streets. His head is bent, his eye downcast and his glance furtive. Batlike, he loves to be alone. Isolation has made him different from other men. Possessing tender susceptibilities, his aspect is repellent. Solitude that ennobles or destroys has set its mark upon him. The gifts of other men have become but reflections in him—the touch of the golden sun upon a distant cloud, glimmering for a moment as it sinks to rest. He is a man of probity, however; the law of gravitation is not more certain. Of explicit statement, simple and

unobtrusive, a bit of fire in his blood, or a speck of courage, would have made him a genius. With a mind finely strung, his thoughts have become mechanical merely. In him action has lost itself in detail.

The field of the statistician is not inviting. It is filled with interlopers, tramps driven thither by stress of weather, each claiming a share of the straw, a division of the crust, a sip of the brackish water. Politics, the greed of office, the necessities of life, a desire to live easily, to avoid manual labor, make many men statisticians; such, however, are only interlopers; aliens that jostle the statistician in his work and misapprehend his office. With them activity is mistaken for progress, noise for reason. Isolation blasts them as it does all formed for society. It evolves the base in their nature at the expense of charity and amiability. They become a prey to morbid fancies and unhealthy exercises. These aliens, however, are not content simply to live; to be tolerated. Arrogant and intrusive, they misconstrue the situation and complicate its possibilities.

The statistician possesses in his sphere the expansive power of steam and the indestructible quality of matter. The contiguity of space that surrounds every theme, arrests his attention and loosens his tongue. The unnumbered volumes that lie silent upon our shelves, a hiding place for mice and a receptacle for dust, attest his industry. It has been decreed from the com-

mencement that every subject shall, in the evolution of time, submit itself to his microscopical calculations.

Man's ambition finds its reflection in the statistician's work. While the former has absorbed all that has gone before, the statistician recounts the facts of history, often in secret, attributing their potency to his own agency. Vain conceit!

Our age is statistical: everywhere the statistician is in labor. Commerce and science is his theme. Upon an unfathomable ocean of ink, propelled by idle winds, his bark of paper, oftentimes rudderless, floats hither and thither. He does not spare the midnight oil. One by one he has laid hold of our idols, held them up to the public gaze, smitten them with remorseless vigor, and they have vanished. The itch of inquiry is ever vehement in him, and he attaches himself to new questions as buoys made to float him into paradise.

CHAPTER III.

OBJECT OF ACCOUNTS AND STATISTICS.

In the mass of figures that make up the returns of railroads we find the measure of their success or failure. It is not probable that the statistics of any two railroads are alike except so far as they are compiled for governmental purposes, and even in the latter case they are only generally alike, because uniformity is impossible—inherent obstacles prevent it.

To understand the statistics of railroads requires infinite patience, attentiveness, perception; the power of thinking consecutively upon dry subjects. These qualities, while not uncommon, are rarely exercised. Men jump at such conclusions rather than undergo the fatigue of study. Correct understanding requires continuous, painstaking and exhaustive toil. Statistics are like accounts. The latter cannot be explained: they must be pored over as we would study an algebraic problem. Only men driven thereto or who possess a stout resolution are able to do this. The incentive must be great. Because of this, men who are not experts devote only such attention to the subject as necessity compels. Want of knowledge in matters of this kind is not considered a reflection upon their industry or capacity; rather the contrary. Because of this those

who have charge of accounts and statistics should be moderate; careful to separate the essential from the non-essential; that which can be profitably studied by owners and managers from that which is immaterial. They should, above all things, strive to make their exhibits clear, to avoid burdening them with cumbersome matter that may prevent that which is valuable from being perceived.

Statistics are the electric lights thrown on industrial and social affairs, illuminating the acts of all concerned. The supervision of the owners of railway properties is impossible without this light. Pinching economy, a little money saved by curtailing statistics, may be a shield behind which thousands of dollars will be frittered away. It is impossible to analyze the affairs of corporations without the aid of statistics. The information compiled in this direction has, of course, different values. Many statistics that one company esteems important are omitted without thought by others. Some companies have practically no statistics whatever. I know an instance where a company in straitened circumstances abandoned all its statistics. Generally speaking, however, such action is impolitic. It could not save a company from failing, and might precipitate bankruptcy. Under every condition of affairs corporations will do well to maintain full sources of information in reference to their workings. It will induce economy and heighten the effort of managers and employes.

Statistics are conducive to good morals and efficiency.

Much of the statistical information embodied herein is fundamental—indispensable to every company, whether rich or poor, little or big. Without it the affairs of a corporation may be all right, but its real condition can only be a matter of surmise. To say that such a state of affairs is demoralizing in corporate life is to put it mildly.

Some of the tables embrace information that may be termed of minor value. The enumeration is far from complete. Railway statistics are illimitable.

When managers have the time and disposition to study and profit by what statistics tell, money expended in compiling them is well invested.

A necessary concomitant of efficient management of railway property is a thorough and effective system of accounting—one that takes cognizance of every dollar earned or spent and subjects it to analysis, not spasmodically, but uninterruptedly.

The English system of appointing temporary auditors to examine into the accounts of railroads at the close of the year and report to the owners is, in certain respects, a delusion of railway management. It deceives both the owner and the public, for the reason that in order to understand the affairs of a railroad through the medium of accounts, or to know at least whether the accounts are rightly kept or not, they must be followed in detail from the commencement to the

end, item by item, day by day, week by week, month by month.*

No one can go into the office of a railroad at a particular time and audit its affairs. They must be audited as they occur.

The accountant who does this is the real auditor. Others may see whether he is efficient or not, but they must look to him for a true history of the company's affairs. He is its real historian; the real auditor. He alone knows whether the conclusions arrived at are authentic or otherwise.

To make his history valuable he must be sufficiently free in his office to be able to go forward in its discharge honestly and faithfully, looking neither to the right nor to the left, considering no interest, personal or otherwise, except that of the property. The auditor of a company, i. e., its accounting officer, has nothing to do with the management. He is merely a scribe. To be honest, to be trustworthy, he must be largely freed from the influences of local managers.

Effective accounting requires such careful and systematic classification as may be necessary to afford a fair exposition of receipts and expenditures. For the practical uses of the management the accountant must carry his analysis far beyond this, so far as labor, material and other outlays are concerned. Published expositions suffice

* I do not say the public auditor of England does not fulfill a useful office, but I do say that undue importance should not be attached to his work.

for the stockholder because he has neither the time nor appliances for probing the subject further. But the management must be thoroughly and systematically posted in every detail, or irregularities will creep in that no one would otherwise suspect.

The cost to a company of its accounting should be commensurate with results; great expense must not be incurred to achieve purely theoretical objects. No form of accounting that does not yield, either directly or indirectly, returns equal to or in excess of its cost, is worthy of regard.

As accountants produce nothing in themselves, it should be a study with them to achieve results with the least possible outlay, to avoid circumlocution and red tape; to stop orifices with clay and not gold.

Many companies are burdened with the expense of their accounts to an extent that neither their accountants, managers or owners conceive of. Ignorance in regard to accounts is generally an insurmountable obstacle to any intelligent attempt to determine whether a system of accounting is what it should be or not. Comparison of cost is of no value, for the reason that the system that costs the least may be the most expensive. How are we then to determine which is best? Only an experienced, able and disinterested accountant can do this. The devotees of every system, no matter how absurd, admire and defend it. The advocate of the cheap system will

point to its merits in this regard, while ignoring its defects, or will refer to them as necessary adjuncts because of the money involved. On the other hand, the advocate of an expensive system will justify every detail of his organization, and point, with an inexhaustible vocabulary to the risks, nay, possible bankruptcy, that will overtake a property if a single detail is omitted. Thus defects will be surrounded by a high fence of explanation, laudation or subterfuge that only an experienced and clear headed accountant can surmount.

An obstacle that prevents a company's forming a proper estimate of its system of accounts is the impossibility of determining its cost. Many accountants, such as agents and clerks at stations, are not wholly occupied in accounting; they sell tickets, handle property and perform other labors. So that there is no possible way in which a company may ascertain what its accounting costs apart from its other work. However, we may be assured of this, that cost has a constant tendency to increase, because of the tendency to provide safeguards before unknown or overlooked. Thus, the structure upon which the accountant stands grows deeper and broader with each succeeding year. How to keep it within proper limits may well enlist the earnest effort of every company.

Railway accounting is in a transition state, as much so as locomotive building or track construction. Each day brings forth some new develop-

ment. The business is never learned. Long service and study are necessary to comprehend the spirit and genius of the subject. But these are rarely allowed. The field is too baren. Men turn from it when they can to prospects more inviting.

The duties of the accountant of a railroad bear the same relation to the executive, it may be said, that the duties of a watchman bear to those of the man who superintends the planting, nourishment and gathering of the harvest.

The balance of cash or investments thereof that remains in the treasury after paying operating expenses, taxes and fixed charges constitutes net income. This is the goal. Here lies the essence of accounting. It is the duty of the accountant to verify these figures, to certify to their correctness; to gather every dollar of earnings, to see that no dollar is expended that is not duly and properly embodied in the accounts.

Bookkeeping was an afterthought; a device for recording and classifying affairs and preventing roguery. While resulting generally to the great and permanent advantage of business, the methods were, in many cases, unnecessarily elaborated. This had for its object, originally, a more scientific elucidation of the mysteries of management. But with the lapse of time, and the opportunities the subject afforded, the primary intent was, in some cases, partially perverted through the efforts

of accountants to mystify their superiors and otherwise aggrandize the offices they held. The gratification of the morbid hallucinations that often characterize men of sedentary habits had also much to do with the complications that resulted. However, every day we get onto more solid ground.

Books of accounts are necessary to corporations for the purpose of identifying the money that passes through the hands of different agents. Men who work for corporations must not only be honest, but must be able to demonstrate it.

When accounts go beyond the purpose of records they become statistical.

Corporations, including governments, are, for obvious reasons, compelled to pass beyond the original or primitive basis of keeping account of what they do and what their agents do. And in this lies the opportunity of the theorist.

So far as the fiscal affairs of a railroad are concerned, the summarization of the balance sheet shows how few and simple are its natural headings. On the debtor side is the cost of the property. But this does not necessarily embrace more than one item. Passing on, separate accounts must be opened with each agent and corporation in the company's debt. Fuel and material need not necessarily be separated; they may be bulked under the head of supplies. On the other side of the balance sheet appear the various classes of shares and bonds. These are succeeded by the current or floating liabilities. The list is closed

by the income account, representing the amount of cash, or investments thereof, remaining after satisfying the fixed and incidental charges of a company.

All other accounts (save such as affect particular assets or liabilities) are statistical in character and purpose.

This statement will seem like an exaggeration to those familiar with the myriad details buried under each of the general headings named in the balance sheet. The explanation is simple: The statistical information of railway companies has become, by long practice, so rooted into their general system of bookkeeping that it is mistaken by many for a fundamental basis. The income item, to illustrate, embodies all the working accounts. It is a summary of receipts and expenditures for the period it covers. All the accounts incident to it are poured into it. It is, in fact, a crucible into which details are dumped for the purpose of ascertaining results. But before this the details have been passed and repassed through many sieves of different degrees of fineness. Are these latter necessary? Could efficiency be maintained if they were abolished? Why, for instance, are not current receipts credited and expenses charged directly to profit and loss (income account)? Expense would certainly be saved and the service otherwise simplified thereby.

The explanation of current practices lies in the necessity of identifying the items of receipts

and expenditures for purposes of reference and comparison, and to demonstrate the fidelity of each agent concerned.

Primarily railway accounts are classified so as to enable owners to judge with intelligence of affairs; itemization affords a basis for calculating the future of the property, and determines generally the faithfulness and intelligence that characterizes the management.

The division of expenses is not of so great importance to managers as is generally thought. It is valuable to them as a résumé, but, generally speaking, they are familiar with each account as it accrues. It is their business to prevent extravagance by anticipating it, not to await its development and exemplification in the returns. If, for instance, they awaited the slow process of accounting before cutting down the force in times of depression, the enterprise they represent would soon become bankrupt.

The attention of managers is directed to the present and the future. Their view, generally, is prospective; they are men of affairs, not historical students. And herein they differ from the accountant or statistician, and it is fortunate for the world that it is so.*

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* In this connection, I may say in parenthesis it has always seemed to me that it would be beautiful and instructive to see the manager of a road withdraw himself to the seclusion of his private office, from time to time, to engage in careful and exhaustive study of the accounts and statistics of his line. But my eyes have never been gladdened by such a sight.

To the owner of a property, reliable statistics of a comprehensive character are indispensable. Without them he cannot determine its value or the worth of those whom he has intrusted with the management. It is as to the measure of these details, not their general necessity, that differences occur.

As regards the division of receipts practical unanimity exists. The rule seems to be to divide earnings into five general classes: freight, passenger, mail, express and miscellaneous. In some cases the last-named item is subdivided. In some few cases, where the transportation of a certain commodity constitutes a large percentage of a company's traffic, the revenue therefrom is shown separately.

The particles that make up the earnings are exhibited in the returns with more or less perspicuity, according to the policy of the company, or the caprice of the statistician. Thus we frequently see tables exhibiting the direction of the traffic, as through passengers eastward, through passengers westward, local passengers eastward, local passengers westward, earnings from first class, second class, third class and excursion passengers, number of passengers to and from each station, the earnings therefrom, and so on, the tables following each other until details in regard to each class of receipts are thoroughly explained.

Disbursements involve many separate accounts in the office of the accountant. Some of these are unknown, except to him, and are, in fact, the

scales with which he weighs results. They cannot be classified or explained.

The classification of expenses in published returns, if carried too far, has a tendency to confuse rather than enlighten the student. It is of importance, therefore, to restrict the items as much as possible consistent with due intelligence.

So far as correct methods of accounting are concerned, the amount of cash collected for receipts or disbursed for expenses is immaterial. Returns of railroad companies should be based on the business done, the amount earned (whether collected or not), and the liabilities incurred during the same period.

Thus, it will be seen, through the processes of accounting now in vogue, we have entirely abandoned primitive methods, which looked only to gathering the surplus cash without trying to trace the honesty or efficiency of those handling the business.

Written statistics, to be of practical value to managers, must be simple and easy of access. They are, so to speak, the pulse of a property and indicate the condition of the system, whether it is strong and vigorous, or torpid and dull. It should be remarked, however, that the doctor must test the pulse of his patient personally to know its fluctuations, and must apply his remedies without delay. It would be of little benefit to a man sick with a fever to have a system of recording his pulse that kept his condition a secret from the doctor for weeks after the tests were

made. A railway property occupies the position of such a man. Essential facts in regard to it require to be known as they occur, not to-morrow, but forthwith. Is it possible to compile statistics from the accounts that will furnish this information? Only partially.

Many of the facts that managers need do not require elaborate statistical tables nor voluminous accounts. They read them in the faces of their subordinates and the thousand and one impressions conveyed, they know not how: in the conversation of employes and brother officers; in orders that reach them for equipment; in the number of trains moving; in the character and extent of the loads hauled, their direction, the points from whence they emanate, the places to which they go; in the communications they receive; in their verbal intercourse with the public; in the amount of the pay roll; in requisitions for supplies; in the vouchers that reach them.

We cannot recapitulate the sources of information officers have except imperfectly. They are, however, such as to enable them to act promptly. When business decreases they see it, and feel it, and the force is cut down accordingly. They come to know intuitively where reduction is possible and how far it may safely extend. Their action is immediate and, therefore, effective; cause and effect are coincident.

If managers were dependent upon the necessarily slow pace of statisticians for information, they would not learn of the falling off of traffic

(and the idleness of the force resulting therefrom) for weeks after its occurrence. These facts are patent and teach the worthlessness of much statistical data. The bulk of the statistics compiled, it must be remembered, is for the information of officers; if of no value to them, it is of no value to anyone else.

These reflections suggest the necessity of intelligent discrimination in arranging and compiling railway statistics. They suggest the necessity of the accountant sinking his individuality in the discharge of his duties; of expediting his work as much as possible; of confining it to necessary and useful fields; of adapting it to practical needs. No work that he performs that does not answer some practical purpose is of any earthly use. It is not interesting either to railway men or to the public.

Railway statistics have no value to owners except so far as they record essential details or are necessary to managers or evince the efficiency and faithfulness of managers. Every consideration therefore suggests that they be reduced to the lowest point consistent with the objects to be attained by them.

CHAPTER IV.

ORGANIZATION.

Many of the details of railway accounting whereby responsibility is fixed seem, superficially viewed, to be unnecessary—the offspring of stupidity rather than the product of intelligence and experience laboring to secure a beneficent end. Many details possess, seemingly, no significance whatever, others appear too complicated to be valuable.

The circumstances attending the practical management of railroads are peculiar. The interest represented by these corporations is in every case exceptionally great. Their fiscal affairs are especially extended and complex. This latter is in part caused by the great extent of country they traverse and the necessity of adapting methods conformatory to the experience and ability of widely different men. The amount of money handled (that is collected in small sums), the character of the business, the relation railroads occupy to the public, the great number of their employes, and, finally, the difficulties of looking after expenditures for labor, material and other purposes over a wide extent of country, make the efficient handling of railway accounts exceedingly difficult.

The fact that the business is conducted wholly by employes, that the supervision of owners is indirect and, in many cases, remote, make it necessary to surround every transaction with checks and safeguards such as are necessary to secure faithfulness and the concurrent action of two or more independent officers.

That checks and safeguards are frequently inadequate is very likely true, but that they are ever too severe or too rigidly enforced for the good of the service I do not believe.

The organization of railway corporations is a matter of the utmost difficulty and requires particular talent and an intimate acquaintance with the business, coupled with a knowledge of the peculiarities of those who carry it on. Only men of long experience and great observation and application possess these powers.

In reference to railway statistics. Only those who have a comprehensive knowledge of railway affairs, particularly the relative importance of different things, are able to decide what is necessary and what is not. Without such knowledge intelligent decision is impossible. As well might ignorant men form laws, construe their meaning and apply them. Nevertheless, the amateur is present here as he is elsewhere, full of resources and confidence, and especially active in giving advice and applying it. The accounting department of railroads was at one time managed wholly by this class; men trained in other business, who understood the fiscal affairs of grocers, bankers

and manufacturers, but knew nothing about the peculiar wants of railroads. The rapid growth of these great properties did not give their owners time to educate the men they needed. To-day those in charge, including those who direct fiscal affairs, are bred to the business, just as they are in other callings requiring technical skill. The result is greater knowledge of resources, greater development of business, greater economy in expenditure, greater responsibility, greater subordination of the employe to the owner and his interests.

The magnitude of a railway company's affairs prevents the subject being mastered by one man. Men who have been actively employed all their lives realize at the end that they have only succeeded in comprehending a part; that the whole is too great to be mastered; too varied, too changeable, too subtle, too progressive, attended by too many complications and incongruities. No one ever will be able to grasp the subject as a whole, any more than particular men can comprehend all there is in the science of war, law, medicine, astronomy, philosophy or trade.

CHAPTER V.

ORGANIZATION OF ACCOUNTS, WHEREIN UNIFORMITY IS PRACTICABLE AND DESIRABLE.

It is neither desirable nor practicable for the government, or anyone else, to prescribe, except in a general way, what books a railway company shall keep or the forms and methods that shall be observed. The bases may be the same in all cases, and by that I mean various headings or accounts shall represent practically the same thing in every instance. There should never be any ambiguity as to the constituent elements of an account. Particular accounts should mean the same thing everywhere. The manner of compiling them is not material. Freight should mean the same on all railroads, passengers the same, and so on. There is nothing theoretical or pedantic in such a requirement. But how the accounts shall be kept, how the amount of freight earnings shall be summed up, how the amount of revenue from passengers shall be determined, whether the data shall be collected in ledgers or upon day books, or otherwise, are not matters about which anyone need concern himself. Owners will look after them, and more wisely than anyone else, because they are more directly affected than anyone else.

The accuracy of a company's accounts may always be verified if proper measures are taken, although the methods of no two companies will agree. A railroad accountant who understands one system can, without difficulty, master another. It is not necessary to have uniform methods in order to be able to arrive at common results. Nor is it desirable that governments should do more than indicate the minimum information railroad companies should furnish. It should be left to the discretion of each company to add such information as its stockholders or the circumstances of the case require. To attempt to prescribe the limit of endeavor in this direction is to deprive railroad companies and the public of the individuality of men, of the natural and acquired knowledge of those who control railroads, to reduce, in fact, intelligence and experience to a common level. To define what books shall be kept and what forms shall be observed in writing up accounts is to deaden, to destroy, in fact, the interest felt in the subject by the thousands of intelligent and progressive men employed in this department of the service, and, in doing so, deprive the corporations of the invention and introduction of better and more economical methods from time to time that the study and experience of their employes would otherwise suggest.

It would be quite as sensible and practicable to seek to restrict the ingenuity and interest of men in other branches of business.

The appliances of railroads, in connection with their accounts, are the same as the tools of machinists, carpenters, plasterers, plumbers, watchmakers, and other skilled workers. Prolonged and earnest thought has been given to the subject; the greatest possible ingenuity has been exercised to add to the efficiency of accounts and to lessen their cost.

The appliances of railway accounts are peculiar and technical, and such as the necessities of a company's business and the capability of its servants permit. They are changed continually. Ingenuity and experience day by day lead men to the discovery of something new and better. This department of railway service is as much of a science as mechanics. It requires for its conduct and development the skill that only comes with long experience, close thought and absorbing interest. To attempt to fix the instruments that railway accountants shall use would be to deprive the subject of all interest except to merely mechanical men. This would be a misfortune, both to railroads and the public.

In reference to the value of the appliances invented and used by railroad men in connection with accounts, it is enough to say that many companies that to-day pay dividends would not be able to do so if it cost as much, relatively, to keep their accounts as it does those of merchants and manufacturers. The cheapened appliances that have been introduced represent to many companies the difference between profit and loss.

The number and value of these appliances cannot be accurately told. A great railway, organized with a view to securing the utmost economy of management, will use fifteen hundred different forms in its business. These will have been introduced at widely different times and under widely different circumstances. Many of the forms will have represented to the company interested a saving of thousands of dollars.

For these and other reasons it will be apparent that this is not a field for amateurs or those who seek through mediocre methods to stifle invention and growth. It is not a field where it is wise to insist upon particular forms. It is not, in fact, a field for governmental meddling—as properly meddle with the tools of carpenters and machinists. Wisdom requires that the utmost latitude should be countenanced and that every encouragement should be given inventors to discover and apply more economical and effective methods.

But suppose a uniform system of bookkeeping were to be attempted, what would be the probable result? What has been the practice? Every railway company has an accounting department; for half a century each company has been training men in this particular field. The department has a head, assisted by a trained staff and an army of intelligent and skilled workmen, each possessing an individuality, each animated by a desire to succeed. The best system of accounts for the property, all things considered, has been a study day

and night to all concerned. Not only their own experience, but the experience of others, has been utilized to cheapen and better. Is it not apparent that if at the commencement the government had stepped in with a uniform system the business would not have progressed as it has? The myriad men in the service of the railroad companies would not have taken it up and studied it except in a limited and spiritless way. Changes would have emanated largely, if not wholly, from the government bureau. There would thus have been substituted for the intelligence of the accounting officers and their subordinates, the limited intelligence and still more limited interest of a small force of men, none of whom had great practical knowledge or was particularly concerned in the application of better appliances or the economical operation of railways generally. Experience would have been what it always is where governments dominate; it would have been the experience related by M. Bela Ambrosovics of the Hungarian State Railroads at the International Railroad Congress, at Paris: "Excessive governmental centralism, with a greedy desire to extend itself, on the one hand crushes the mind and limits it to superficial work, and on the other weakens it by suppressing originality and ambition in the employes scattered along the line."

Generally speaking, it may be accepted as true that the owners of a railroad are not less able or disposed to manage their affairs faithfully and

discreetly than the owners of other property, and anything that tends to lessen their interest is unfortunate, not less to the public than to the railway company itself.

The assistance of the state is acceptable, so far as it can be utilized without creating in the public mind misapprehension as to the real source to which it must look for great efficiency in railway service. It is welcome, so far as practicable, without lessening the responsibility of railway owners and managers, or burdening the companies, and through them the public, with the forms and observances that seem inseparable from governmental direction.

In reference to railway exhibits, it is eminently proper that those published by the government should be upon a uniform basis. In order to secure this there must be definiteness in regard to the constituent elements of each account; uniformity as to what particular things mean; thus headings must mean the same thing everywhere, and readers must have the means of knowing what different accounts embrace. This is practicable. Some one writing on the subject has stated the case very clearly as follows: "What is needed in order to make a system of government returns valuable, is that the principles underlying the accounts be clearly defined and consistently applied. If, for instance, on one road the rails and ties used in renewals of track are charged to the proper account in the month in which they are used, while on another road they are charged

in the month in which they are paid for, or perhaps are divided up among the several months of the year, there will not be, cannot be, uniformity in the exhibits of the several companies. In the same way, if one company includes in its accounts for a particular period all moneys earned during that period, without reference to the time of collection, while another company refuses to consider money earned until it is actually in the treasury, there cannot be uniformity in the returns and their value for purposes of comparison will be greatly lessened."

CHAPTER VI.

ORGANIZATION OF ACCOUNTS. FREQUENCY OF RETURNS.

The tenacity with which men stick to existing customs evinces at once their strength and their weakness. While it protects them against dangerous innovations it also retards growth and the realization of better methods. As between those who advance too fast and those who advance too slowly, however, the advantage is on the side of the latter, in my judgment. This is evinced in political affairs. The harm attaching to the teachings of many so-called reformers makes us distrust the whole brood. The thing itself they teach may be well enough, but the unforeseen complications that arise out of it not only neutralize benefits, but in many cases greatly outweigh them. The English speaking people, above all others that have ever existed, illustrate conservative adherence to existing things; indisposition to change except after mature deliberation. The strength, duration and beneficent institutions of England demonstrate the wisdom of her people. We do not need to point out the nations that are pursuing a contrary principle nor the gulf into which they will plunge.

The glory of youth is its vigor. It believes in its own wisdom and purpose. Strange association of strength and weakness! Middle life cools the ardor, dulls confidence. Thus what we do hastily at one epoch of our lives, we approach slowly and doubtfully at another.

The young unqualifiedly condemn that which they do not unqualifiedly adopt. Old age is more charitable. Men come to be indulgent. However encrusted men's prejudices, the shell that encases them never becomes quite hard, so long as they observe what is going on about them. However much we admire our own methods, we find that we have much to learn from the wisdom and experience of others. Moreover, we discover that the thing we esteem perfect to-day, we find it easy to improve upon to-morrow. This is the evidence that we are growing and not shrinking; that the brain, like a spreading tree, each year takes on added verdure, throws a wider and longer shadow, takes deeper root, produces better fruit.

These thoughts are suggested by the revolution of business affairs, particularly those of railroads. That which appeared perfect a few years ago is to-day relegated to the attic of forgotten rubbish, or clings like a nightmare to its adherents.

A danger that besets business men is indisposition to change. The methods that at one time represented the acme of knowledge they continue to regard as perfect to the end. They ignore growth; are lulled to sleep with the belief

that having perfected a thing at one period of their lives, it must necessarily represent perfection at another period. They fall into a rut which grows deeper and deeper as they advance, until they not only become incapable of lifting themselves out of it, but reject with impatience any suggestion of change.

It is also especially hard for a man to realize that something produced by another is superior to his own. We cling to that which we originated as a mother clings to her offspring. It is ours. We suckled it, held it, started it on its journey. We cannot be made to believe it can grow old and decrepit. There comes a period in the life of every man, however, when he does one of two things; he overcomes his too great self-esteem or goes blindly forward to the end, growing more and more obstinate, more and more stupid, each year. It is all-important which road we take. One leads us through green fields, abundant nature, the other through desolate lands and lost opportunities.*

It is not necessary that our experience should be associated with great events; it is just as real

* One of the most striking illustrations of man's impatience of others was called to my attention by a railway officer in connection with a certain form. In talking with him on the subject he told me he had adopted it, but had not read the instructions accompanying it, as he wished to get up something original. The instructions in question were voluminous. He was compelled to adopt the blank, but drew the line there. His instructions, he was determined, should be original. I thought this as fine an illustration of man's egotism as I had ever seen.

in small things. Greatness is a relative term. It is not more difficult to manage great affairs for those schooled amidst such events than to apply ourselves to small matters if our lines lie in the latter direction. The events in the life of a business man evince greatness as much as the government of an empire evinces the power and glory of the imperial ruler. The only difference is that one affects mankind more greatly than the other. One also takes on an historical hue, while the other does not. Many men who have died and been forgotten, like the subsiding of a billow, possessed greatness superior to that of Alexander. But while the glory and brutality of Alexander will be remembered forever, the others are not remembered longer than the fleecy cloud that passes over our heads. These reflections, while disheartening in a certain sense, yet increase man's self-respect. Intrinsic worth, rather than public estimation, is the test. To possess the genius of Alexander is as much as to be thought to possess it. While no one can enjoy reputation built upon pretense, men may be none the less great although not recognized.

These things have no connection with the subject I set out to discuss, which is at once homely and limited. They are suggested by the common peculiarities of men; similarity of the great and small.

The experience of a railway accounting officer lies wholly among prosaic facts, among the dry

details that attend financial operations; in providing methods that facilitate business. But, notwithstanding all the study he gives the subject, he dies dissatisfied with what he has accomplished. The problem cannot be mastered. This is partly owing to his limited capacity, and partly to the fact that the subject is a large and growing one. The thing that at one period of his life seemed perfect, he finds afterward upon examination to be crude and imperfect. He dies trying to attain perfection of method. This is the experience of every student. Methods he once thought comprehended everything afterward appear to be very shallow.

Instances of the changeableness of men's practices are to be found without number in the methods of railways. They are noticeable in every department, especially in that of accounts. Thus, practices in regard to time of rendering returns have run the whole gamut of experience, at one time daily, at another weekly, at another monthly, according to the experience and light of those in charge.

I set out to discuss the relative merits of these methods in this chapter, but, before doing so, it will not be out of place to suggest two or three general principles that apply generally to the accounts of corporations.

In the first place they ought to be based on actual occurrences or common probabilities;

never on remote contingencies or possible wants. Accounts have no object except to prevent loss and enlighten the principal. They have no value in themselves; add nothing to a property; nothing to the cash on hand. The expense they entail, while unavoidable within certain limits, is unjustifiable if carried beyond that.

But how are we to discover this? By keeping constantly in mind the purpose of accounts; by restricting them within this limit; by avoidance of attempts to attain theoretical perfection; by confining ourselves to practical wants; by carefully anticipating what will be needed; by avoiding visionary or speculative aims, and in a statistical way by confining ourselves to the collection of data merely (without seeking to compile it) in all doubtful cases.

With some companies statistics are based on what the management *may* ask for; they should be based on what the management *is sure* to ask for. There are three different methods followed. First, that which makes provision for every possible question. Second, that which discerns probable inquiries, but rests content with collecting (without compiling) the raw material needed in answering the inquiries. Third, that which disregards statistics altogether, that does not contemplate supervision or assistance through their aid. Now, of the different practices, the second is clearly the best.

Under the first named careful compilation is made of every expenditure; also of each source

of revenue, however small. The work involves enormous expense. Under the second method the nature of every expenditure is embraced under certain general heads, but no attempt is made to individualize each expenditure, i. e., array it under the head of the particular building, structure or thing where it belongs until the information is actually called for; thus, certain expenditures will be included under the general head of bridges. If at any time the items connected with or the total cost of a particular structure is wanted, the accountant goes to the books and picks out just what is needed and no more. The demand for such information is limited, and out of expenditures on a thousand buildings actual details will not perhaps be required for more than a dozen. If this is so, then work expended in writing up the others would be lost. But I think I hear some one say that expenditures on every building should be known in detail and that if a management is painstaking it will require such information. The answer to this is, that those responsible for the work know from day to day, largely by personal observation, what is expended. It adds nothing afterward in such a case to have the details; managers have enough to do to direct the work in hand. Retrospection in such cases is valuable only as it enlightens in regard to the future.

These are questions of general accounts and concern everyone connected with railroads as owners or managers.

In reference to traffic returns and the time when they should be made, the Monthly system, so far as abstracts are concerned, is an admirable one, daily returns being restricted to aggregates, thus:

Daily remittance of cash to headquarters.

Daily reports of earnings.

Daily return of original way bills.

Daily return of duplicates of interline way bills.

Daily examination of rates, extensions and footings of way bills; also of the numbers of way bills, to see that they follow consecutively and that none is missing.

Daily returns of tickets collected.

Daily train reports.

Daily train reports from baggagemen.

Daily reports of baggage checks used.

Daily reports of the location of cars.

Daily transmission of claims for overcharges, losses, damages, injuries and kindred matters.

Daily examinations (at irregular periods), by competent inspectors, of the affairs of agents and storekeepers.

Daily transcribing of time worked by employes.

Daily recording of the company's material received and used.

Prompt payment of discharged men.

Prompt payment of bills as audited.

Daily writing up of the company's books so far as possible.

To this extent the daily system is admirable. But is it a daily system? Not as generally under-

stood. The daily system comprehends, its advocates claim, the rendering daily of balance sheets by agents and others; abstracts of freight received and forwarded; reports of ticket sales; also, in some cases, reports of labor and material.

The daily system, it is apparent from the foregoing, is misnamed. It is only a daily abstract system, and a limited one at that.*. Its adoption by so many roads is sufficient, however, to commend it. No one can examine into its merits without finding many things to approve. Under its operation affairs are written up as closely as possible, thus adding to the ability of a company to ascertain the status of particular accounts.

This is especially true in reference to freight matters; it takes cognizance incidentally of delayed way bills. It is claimed that the accounts of an agent may be more quickly scanned under its use than under the monthly system.

The objection to the daily system, so called, is the expense it entails. This expense may be less than is supposed. Accurate comparison would not, perhaps, be greatly to its disadvantage. Or it is possible, perhaps, to construct a daily system as cheap as the monthly; it would be foolish to say that such a thing was impossible, because we see every day things done we before thought impossible. However, at present the cost of the daily system is undoubtedly greater than that of

* Some companies require daily *abstracts*, but leave *cash* (the essential thing) in the hands of employes indefinitely!

the monthly. Continual summing up of results under it adds to labor and cost.

Another thing that operates against the daily system is the fact that once a month, or oftener, a recapitulation must be made, which expense is in itself nearly as great as that involved by the monthly system.

Some time (as often as monthly) the amount due from agents must be charged on the general books and earnings credited. This may be done daily, but the labor will add just so much more to the expense. The added cost of mailing and transmitting under the daily system need not be counted, as under other methods certain reports are required daily.

It is claimed that under the daily system of abstracts earnings are more accurately ascertained than when agents are simply required to give aggregates. This is true, but under the latter method they are more quickly ascertained, and while they may be only approximate they are sufficient for practical needs. The purpose for which the management requires them is to know *generally* what the company is doing. If, in order to ascertain daily earnings, we must wait until the accounts can be audited, delay must occur. This is an insuperable objection. The information is of no value when old. Moreover, there will always be business in transit of which daily reports take only partial cognizance; business hung up, so to speak. This is another objection. A very simple substitute for daily

abstracts of traffic is to require agents to report merely the totals each day; the labor this requires is trifling, both in compiling and summing up afterward at headquarters. Within an hour after returns reach the auditing officer the management knows approximately what the property has earned.

In corporate life the tendency always is in the direction of elaboration. This is especially so with accounts; more and more red tape, greater complexity, the multiplication of returns, spending a dollar to save a cent, seeking to provide for every contingency, striving after theoretical perfection, wasting money for things that, while good in themselves, are not worth the cost.

In connection with every problem or device the officers of railroads ask themselves the question, "Is it warranted; is it, all things considered, the best?" They direct their minds constantly to cheapening processes as much as to the securing of other results. The two are coincident. A great many years ago I was given charge of the disbursement accounts of a railroad. I found in the office seventeen clerks, many of them high priced. The duties consisted in compiling and auditing the material, labor and other expense accounts. It seemed to me the cost was excessive. I accordingly went to work to see if it could not be lessened. In three months the force was reduced to one man. It was done in this way: The returns sent in by shop clerks, operating officers and others were bound and made to answer

permanently, thus avoiding cost of retranscribing. Impressions taken of them before they were sent constituted an accurate and full record for those who compiled them. By this device, and others generally similar, the company was able to reduce its clerical force at headquarters sixteen men without increasing the cost elsewhere. A great source of expense in accounting is duplication of work; keeping elaborate records at stations, shops and local offices on the road, and duplicating them at headquarters; in the use of costly records, where temporary, or at least very simple, ones will suffice, but mainly in overlooking the fact that the province of accounts is to enlighten merely, and that records have no value in themselves further than this.

The enforcement of particular practices by men whom we know to be efficient and conservative, elicits our respect in spite of different views. Thus the comparison of tickets collected on particular trains with tickets sold for such trains, is an illustration. Under this method agents make a return to headquarters for every train. The tickets collected by the conductor of the train are afterward compared with the tickets sold. It is supposed that failure to cancel and return tickets collected will be discovered by this process. That is the object, and it is a good one. But, unfortunately, people who buy a ticket for a train do not always go by that train. They may not go for a week. This, in a measure, renders valueless the attempt to check the tickets sold for a

particular train with the tickets returned for that train by the conductor or ticket collector. The question then suggests itself, is the expense justified? I have never believed it was, and yet great stress is laid on the work by some of the best managed companies in the world. Differences like this lead men to distrust their judgment; teach them modesty.*

In reference to daily traffic abstracts from agents, it is undoubtedly true that the oftener we ascertain the status of a debtor the better, unless we are secured against loss; if so secured, the value of the information is greatly lessened; indeed, if it cost anything we may forego it, just as we forego a daily inventory of our property or the continual counting of the pennies in our pockets. Is there any more reason why we should know the status of an agent daily than hourly? It is indefinite at best. The traffic covered by the daily returns of one agent never exactly coincides with that covered by another. Returns must be closed with reference to trains and the convenience of business. At one station this will happen at six o'clock in the evening, at another at nine o'clock, at another at one in the morning, and so on. But this is also true of monthly reports.

One advantage claimed for the daily system of freight abstracts is that it tends to prevent

* The practice of limiting the "life" of a ticket to a short period, say, twenty-four hours, greatly facilitates efficient auditing by curbing the improper use of tickets.

suppression of way bills and, consequently, delay in remitting moneys collected. This is not true, or only in a limited sense. Perhaps way bills could not be suppressed for as great a length of time under the daily system as under the monthly, and this is true of the suppression of collections generally; but it allows sufficient latitude to enable those inclined to be dishonest to achieve all their ends. No system of returns will prevent the agent or person in charge from dropping out collections, taking advantage of the situation to suppress for the moment debits against him. The only safeguard against this is constant, intelligent supervision, enforced on the ground and elsewhere. Suppression of way bills may be discovered through various ways, but more particularly through the record of the movements of cars at stations and the receipts in the hands of the public.*

The daily system does not prevent either temporary or permanent suppression of accounts, nor are defalcations less likely under it than under other methods. It is assumed by some that it throws especial safeguards around stations. This is not true, however. If those who fill positions of trust are properly bonded and their accounts supervised from time to time through traveling auditors and in other ways, there is no risk to the employer under any system. I have

* The methods by which the suppression of way bills may be detected are more fully set forth in the book, "Principles Governing Collection of Revenue."

collected over a thousand millions of dollars under a simple and economical monthly system, without the loss of a dollar. No system is good for anything unless effectively enforced. The monthly system is as safe and as effective as any, and much cheaper than either the daily or weekly.

CHAPTER VII.

DIVISION OF ACCOUNTS AND RETURNS.

Elsewhere I have pointed out the limits within which it is desirable to enforce uniformity in accounts. Uniformity should appear rather in results attained than in the processes by which results are achieved. I briefly describe below the methods that suggest themselves to me as effective in handling the general fiscal affairs of railroads. I do not claim they are the best, nor, indeed, that there may not be others much better. I give them as formulas simply by which the operations of railroads, including their receipts and expenditures, may be accounted for and finally focused.

In the first place a general ledger, journal and cash book are needed. The ledger and journal must be kept according to the principles of double entry bookkeeping—no credit without a debit and *vice versa.*

Transactions in cash should be spread upon the cash book as they occur. At night the balance of cash as shown by the book should agree with the cash on hand. The book should then be closed and the balance carried forward to the succeeding day.

The general ledger should be balanced monthly. It should embrace a true history of the fiscal affairs of a company—property, assets and receipts under their several headings, expenditures and liabilities and other accounts in the same way. The explanation of the accounts is found in the journal referred to above and attendant and tributary books.

When the general ledger is closed a balance sheet is made. This balance sheet shows the condition of the company's affairs. On the credit side the amount of its capital stock and funded debt; also its liabilities. The liabilities of a company consist of its outstanding bills, notes, certificates of indebtedness, drafts, checks and acceptances; its unpaid rolls; the amount it owes the sinking funds; the amount of interest due or accrued on its bonds; unpaid dividends on its stock, and all other items of indebtedness whatsoever.*

Liabilities of every description should be entered upon the books and embraced in the general balance sheet as soon as ascertained, the proper accounts being charged.

Liabilities for labor should be embraced in the accounts for the month in which the labor is performed.

Liabilities for supplies (fuel and material) should be entered upon the books in the month

*"Liabilities, in addition to other things, shall include debts of every kind that have been incurred and all interest that has become due, which shall be unpaid at the date of the report."—*Regulations Massachusetts Railroad Commissioners, 1876.*

in which the supplies are received by the company.

On the debit side of the balance sheet the cost of the property is given;* also all assets, including supplies on hand.†

The general ledger should be closed and results shown for the month or year as soon as practicable; the earlier results are known the more valuable they are to owners and managers.

What may be termed the fixed statements or exhibits of railroads (ascertained from the general books) are: the general balance sheet; earnings from different sources; details of operating expenses;‡ particulars of profit and loss (income account); details of construction.

* The property, real and personal, necessary to fit a railroad for business, makes up this item.

† The assets of a company consist of cash on hand; amount of uncollected balances due from agents and others; balances due from individuals and corporations; bonds, stocks, notes and other securities it owns; cash and uncanceled bonds in sinking funds; fuel; also material (both new and old) not in use.

‡ Operating expenses include the cost of working the property and keeping it in repair. Charges for material and labor should be entered upon the books in the month in which the material is used or the labor performed. Charges other than for material and labor should be entered in the month in which the expense is incurred, or as soon as ascertained.

CHAPTER VIII.

THEORY OF ACCOUNTS AND RETURNS.

Reference has been made, incidentally, to the disposition of the returns of agents and others after they reach the general offices of a company. But no description is attempted of the *modus operandi* of spreading the accounts on the general books.

This information, necessarily known in a practical way to but few, is both interesting and instructive to those interested; more especially the immense number of subordinates engaged in office duties. These latter are, as a rule, ambitious; their ambition leads them to inquire into every detail. In no other way can they fit themselves so that, no matter where the vicissitudes of the service call them, they will be able to discharge their duties creditably. They know that competition for preferment upon railways is so active that only those who strive intelligently as well as indefatigably can hope to attain prominence.

To those not familiar with the subject, the different divisions of the railway service have little or no relation to each other, but a short acquaintance with practical operations

demonstrates that nothing can be learned in one department that sooner or later will not be found useful in other branches of the service.

This is especially true in reference to railway accounts. The accounting officer and his staff and office force should possess an intimate knowledge of all returns, how they are made, by whom, when, what they embrace, their purpose, to whom sent, and so on.

When the general accountant does not possess this information, he lacks knowledge necessary to make him highly valuable to his employer, and he must not demur if others with greater skill outstrip him in the race.

The duties performed in different departments in connection with accounts are rarely, if ever, the same with any two companies. It follows that details observed in arranging the accounts preparatory to spreading them upon the general ledger also vary. The results arrived at are the same under all systems.

But all companies do not exercise the same degree of efficiency or economy in arriving at results. Lavish outlay is not necessary. It is possible to exercise great simplicity and economy without losing sight of any essential; without omitting a single detail. Practices, however, differ. Upon one road the accounts will be preserved upon loose pieces of paper and unfit books of record; upon another an elaborate system of bookkeeping will be observed in each department so as to record the accounts in every

stage of transition. Under the first named system not enough is attempted; under the last too much. Investigation would elicit the fact that the accountant who preserves his records on loose papers and unfit records is not well schooled in his business; in the other case the author of the system will be found to be a practical bookkeeper of exact and rigid cast, delighting in manipulation and harassed incessantly by doubts lest some trifling detail shall escape the vigilance of the accountant or the musty books of record.

No two companies keep their accounts in the same way or under the same supervision. Upon one line the accounts will be found concentrated in a particular department under one head; upon another the general books will be kept apart; upon another the passenger and freight accounts will be separated from the balance; upon one road a particular officer will have charge of traffic and disbursement accounts; upon another line three or four different officers will perform this work; upon one line the general books will be kept at the local headquarters of the company and a duplicate set, perhaps, in New York or London; in some cases the accounting officer is simply a general bookkeeper, in others an executive.

The combinations that attend the administration of railroads are as curious and unexplainable as the odd situation of men's lives. Corporations, like men, drift along natural lines. They are the

creatures of environment and their organizations are greatly affected, and very properly, by the talent and experience of those in charge. A system that would be efficient upon one road would be inefficient upon another.

The differences I point out are merely by way of illustration. To recount them all would fill a volume. If we succeed in finding outwardly the same conjunction of affairs upon two roads so far as accounts are concerned, we should discover on further inquiry that, while seemingly the same, an intelligent system of checks and balances was observed in one case and perhaps disregarded in the other; that in one case the accounting officer was clothed with the authority required by his office and was respected therein, while in the other he was denied power and in consequence lacked efficiency.

It is not necessary to a clear understanding of railway accounts that details of local organization should be uniform or should be known. Whatever the situation, it is colored by the character of the men in charge, the nature of the business they look after, and the affairs of the corporation they work for.

The important thing in connection with the accounts of railroads is that they should be impersonal and that they should be definite. Such a system may be analyzed and defects discovered and corrected.

No attempt should be made to secure perfection in petty details where cost will not warrant, yet

the necessity of enforcing proper safeguards must never be lost sight of.

The returns of station agents and others along a line should, so far as practicable (and good may be attained thereby), be sent to headquarters through local officials, so that the latter may keep themselves informed in regard to details promptly and at the minimum cost. Thus labor may be utilized to the utmost and accounts minimized, the work that is performed being used throughout without the necessity for its duplication arising. The following brief summarization outlines the channels through which returns may be sent to the accounting officer. It is very simple.

Reports of passenger business, including tickets collected by conductors, may be transmitted to an officer called the ticket auditor, who audits the same and reports results.

Returns, statements and way bills affecting freight traffic may be forwarded to an officer called the freight auditor. It is his business to examine and audit the same and report results to the accounting officer.

Reports of cars may be sent to the car accountant, who causes the necessary audit to be made, and the results forwarded to the accounting officer for entry on the general books.

Disbursements for labor, material and other purposes may be reported by storekeepers, time clerks and others to the auditor of such accounts,

He examines the returns and transmits the results to the accounting officer.*

Passenger, freight, car mileage, miscellaneous and other traffic accounts, also statements of disbursements, should be ready to be posted upon the general books in the month following that for which they are made.

In addition to the records already referred to, there is a register for entering vouchers due by a company, and a register for entering bills due to a company for material sold, labor performed, and so on.† All bills should be entered on one or the other of these registers, as the case requires. When the accounts for the month are ready to be closed the registers are summed up and the results certified to the accounting officer for entry on the general books.

Such, in a word, is a brief account of the method observed in summing up the accounts of railroads.

While details of bookkeeping are variable, there are certain fundamental things about which railway corporations do not differ practically, or should not at least. One is that the accounts shall not be audited any oftener than is required to secure necessary information in regard to the property and due accountability upon the part of everyone. Receipts shall be collected daily as they

* These returns are very voluminous and great in the interests involved. They are described in the book "Disbursements of Railways."

† See Forms Nos. 3 and 4, Appendix B.

accrue; cash collected shall be remitted as often as once a day to the treasurer; bills and pay rolls shall be audited monthly as they accrue. I might name still other things about which, it seems to me, railroad companies might agree, but they are not essential.

CHAPTER IX.

THE GENERAL LEDGER AND ITS AUXILIARIES.

The number of ledgers required will vary with different companies according to the length of road operated and the amount of business done.

Where the operations of a company are small, all the accounts may be kept upon a single ledger. When this is so, bookkeeping is much simplified.

Upon larger roads the bookkeeping is elaborate. The great number of details to be examined and arranged, coupled with the accounts, permanent and otherwise, that must be kept, involve a large force of bookkeepers and a great number of books. The books are multiplied, it may be said, to enable a great many clerks to pursue their duties at the same time without obstructing the work of others. Judicious multiplication of books is thus necessary to secure economy and the expeditious discharge of business.

The necessity for a general ledger is now very generally recognized. The side or auxiliary ledgers are, however, not so universally known. A company is unfortunate in possessing accountants unable to recognize the value of the ledger. Upon its pages every transaction involving dollars and cents finds a secure resting place. It is a burying ground, and the headings of its

accounts are tombstones, serving as guides to the wayfarer or delver after facts.

No other account book possesses the elasticity, comprehensiveness and permanency of the ledger.* All efforts to supersede it with *quasi* record books and makeshifts cannot but result in confusion and loss.

With its attendant journals, the ledger is the final receptacle of the accounts of railways. To understand them requires no special key.

The ledger brings together at one common center in consecutive order all the incidents of a transaction, however extended or complicated.

With the accomplishment of a transaction the account is closed and thereafter disappears from the balance sheet, but the record remains upon the ledger forever.

The legend or name that precedes each account affords a clue to the history that follows.

The index that forms a part of the ledger makes each account accessible at a moment's notice long after its name and traditions may have been forgotten.

Experienced accountants understand perfectly the mysteries of the ledger, and everything it contains may be known by examining it attentively.

This simplicity and universality make it desirable, and an accounting officer should hesitate long before replacing it, even in minor branches of the service, with cheaper substitutes.

* See Form No. 1, Appendix B.

In instituting a plan for recounting the affairs of a corporation, care should be used to select a method that is generally understood and that will protect the company after the persons who transcribe its accounts have passed away. Such a record is also necessary to protect the good name of the agents of a company. The ledger meets these varied requirements. No other book does.

The general ledger of a large railway is little more than a summarized record of its fiscal affairs. Reference to the accounts that appear on the general balance sheet affords an idea of the general ledger accounts. Quite a number of general ledger accounts are, however, frequently consolidated in the balance sheet.

When the volume of business to be recorded is great, auxiliary or side ledgers are provided. Each of these ledgers records the details of one or more general ledger accounts. A ledger account is opened at headquarters with each agent, conductor and employe who receives or disburses money; also with individuals in debt to the company for labor, material, etc.

The opening of a ledger account in such cases prevents confusion and preserves an authentic record.

Prompt entry of an account at the time the transaction occurs will prevent the loss that will follow neglect to do so.

Great delay sometimes occurs in collecting accounts. This delay is caused by disputes,

inability to pay, and other causes. In such cases, it is obvious, the amount is likely to be lost or forgotten, if it has no other abiding place than the pigeonhole of the treasury.

The business of a railway requires that a ledger account should be kept for each debit item, not including traffic accounts, handled by agents and conductors. The rush of to-day erases recollection of the affairs of yesterday. The virtue of a ledger account is this: that so long as it remains unsettled, it is a reminder to persons interested. Without it, occupied with current matters, they would neglect delayed accounts, and end by forgetting them.

The ledger has the further merit that it makes clear the minutiæ of a transaction, no matter how extended. The debtor pays in driblets as he can, and settlement is not, perhaps, consummated for years. Nevertheless, each item, every installment, has its appropriate place in the line, and nothing is overlooked or forgotten.

As many subsidiary ledgers may be used as the case requires, ledgers being arranged, when necessary, so that each will embrace certain letters in the alphabet.

It would not seem to be necessary to devote so much space to a subject about which there can, apparently, be no difference of opinion. But the system of bookkeeping in vogue is still imperfect. Men are to be found, even in this age, who believe accounts to be unnecessary and bookkeeping an extravagance. On the other hand, more or

less people believe that slips of paper and cheap blotters are good substitutes for permanent books of record, and thus from honest but mistaken views create confusion and engender irresponsibility wherever their advice is followed.

A further reason for a ledger is the necessity that the treasurer and other officers should be prepared in an instant to particularize their collections; should be prepared to show how much they have collected from each person, with such other information as may be necessary to prove them to be upright in the discharge of their duties. No other book does this so simply and effectively as the ledger.

In reference to debts due by a company, it is perhaps unnecessary to open a ledger account with each person. Information may be conveyed in a less cumbersome way. And besides, in the event an account is overlooked, the company does not suffer as it does when an account due to it lapses. It is customary with railways to make a voucher in favor of each person they owe. When the voucher is paid the receipt is attached to the voucher. In this way it is impossible to pay too much, and, what is important, the document possesses palpable evidence of authenticity that a ledger account, of course, could not without reference to accompanying papers.

In reference to the use of subsidiary or side ledgers a description of one will suffice for all.*

*The side ledgers are usually of the same form as the general ledger, though special forms may be used; see Forms Nos. 13 and 14, Appendix B.

Upon the general ledger there is an account, we will say, with "Agents and Conductors." Totals only are brought onto the general ledger. Upon a side ledger an account will be opened with each agent and conductor; details are represented with considerable perspicuity upon this ledger; each agent and conductor is charged and credited with amounts appertaining to his account and the balance standing to his debit or credit ascertained. The balance to the debit of all agents and conductors as shown on the side ledger should agree with the balance standing to their debit on the general ledger. One thus in a measure proves the correctness of the other.

The side ledger gives individual accounts; the general ledger the totals of such accounts.

The number of subordinate ledgers varies with the matter to find lodgment. In some cases accounts with agents, conductors, transportation companies and individuals will be kept all in one ledger; in other cases several ledgers will be necessary to record the transactions of agents alone. It depends on the amount of work to be done.

Every account upon a ledger requires to be indexed. If the name of the account is liable to be misunderstood, it should be indexed under different heads, such heads as a person would be likely to look for in trying to find the account. It should be the aim here as elsewhere in accounts to make the record so clear that even a stupid person can unravel it. It is better to

recognize the existence of these people in advance than to be damned by them in the end.

In connection with the ledger embracing the accounts of a carrier with other transportation companies, it is desirable to open an account with each; thus a ticket account should be opened, a joint freight account, a car service account, and finally a miscellaneous account. The last named includes debits and credits not covered by other heads, such as overcharges, losses, damages, equipment repairs, baggage checks, switching, etc.*

*See Forms Nos. 13 and 14, Appendix B, for specimens of ledgers especially adapted for keeping accounts of various classes with railroad and transportation companies.

CHAPTER X.

JOURNALS AND BOOKKEEPERS.

The information the ledger contains is obtained from the journal and cash book.

In another chapter it is shown that economy and the expeditious discharge of business may be secured by a judicious multiplication of ledgers. The same is true of the journals.

Compared with the ledger, the journal records the details of transactions. It is a partial verification of the ledger.

The journal is indispensable. It affords concise and necessary information, gives the details of each account.

It follows that when accounts are numerous and complicated, as they are with railways, a great deal is spread upon the journal; much work is required to write it up. Frequently more than one journal is necessary. This is so where the business is great, where the details are numerous. Work is facilitated and economy secured thereby.

There is one general journal in such cases, as there is one general ledger. The side journals or blotters are written up in the different departments and sent to the general bookkeeper.

In such cases, instead of filing with the general bookkeeper a manuscript of the details of

accounts, they are entered in a side journal (especially adapted to the purpose it is designed for), which journal becomes a part of the permanent file of the general books. A manuscript statement would require to be entered in detail upon the general journal, thus necessitating considerable clerical labor. The information coming to the general bookkeeper in the shape of a journal, susceptible of easy reference and careful preservation, he carries to the general journal only the totals of the sub-journal. The sub-journal thus becomes a part of the permanent record; an auxiliary of the general journal and ledger.*

The general journal occupies the same relation to other journals that the ledger does to the side ledgers.†

Each side journal shows the balance due to or from the persons or corporations it embraces;

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* As noticed, only the aggregate footings of the subsidiary journals are entered upon the general journal. To illustrate, we will take the entry required to be made on account of the freight traffic of the several agencies. Upon the receipt of the "agents' freight journal" (see Form No. 9, Appendix B), duly authenticated as all journals are by the officer in charge, the details are summarized as follows on the general journal:

"*Agents and Conductors, Dr.* $767,910.80.		
To Freight Earnings, Cr.		$767,910.80.
"For this amount as per agents' freight journal A. A. folio 78 certified by Richard Roe, freight auditor, on file with the general books."		

The accounts named are general ledger acounts, and the amounts are duly posted under the proper headings upon that book.

† See Form No. 2, Appendix B.

each balance is posted in the side ledger to the debit or credit of the person or corporation it concerns; all the balances so posted (added together) agree with the general amount charged or credited on the general journal and ledger.

It is not absolutely necessary that the information the side journals contain should be summarized on the general journal. It may be posted directly to the general ledger. The labor of retranscribing, however, is trifling, and it will be found to simplify matters to have all the accounts that appear upon the general ledger pass through the general journal.

With the exception of the summarization of the side journals on the general journal, everything entered on the latter should be given in such detail and with such careful and conspicuous clearness that those possessing no knowledge of the technicalities of bookkeeping may still understand it. This is, however, not always done. An examination of the journals of more than one company would elicit the fact that they contain little information, and that not of a nature to enlighten. No gleam of light, no friendly star, dispels the gloom that envelops them. The habits of those responsible for such a state of affairs are, it is manifest, of the nocturnal order: instinct, not enlightened thought, guides them. Light with them is a superfluity and they do not realize that others need it. They are the creatures of habit and their books are filled with hieroglyphics and technical terms, pregnant with

meaning to them, but incomprehensible to everybody else.

The position of general bookkeeper of a railway company is highly responsible and requires the incumbent to be a man of ability. He must possess clearness of perception and statement; must be accurate; must be able to answer offhand questions that constantly arise in connection with the accounts; must be discreet; must comprehend the company's contracts, leases, understandings and agreements; must be able to analyze quickly and accurately the statements upon which his work is based. Moreover, his habits of mind must be such that he will instinctively question the accuracy of every statement he is called upon to transcribe until, from investigation, its correctness is apparent. He must be able to supervise the work of others as well as to work himself, and, finally, must be prompt, experienced, energetic, decisive and faithful.

The general bookkeeper is on the staff of the accounting officer, and as such should comprehend the object of the checks and safeguards that honeycomb the accounts of railways. He is one of the most valuable and useful men in the service of railroads. Upon his skill and faithful service much depends which the owners and managers of railroads are ignorant of. This is indeed true of all the accountants connected with the accounting departments and the station service. They are the real auditors of a company and its most faithful watchmen.

CHAPTER XI.

JOURNAL VOUCHERS.

For every entry upon a journal a voucher is required; it is the evidence that the entry is proper.

The journal entry is the essence of the voucher. Only such matter is spread upon the journel as is necessary to a clear understanding of the transaction. The voucher gives all the details. The authenticated facts necessary to prove the correctness of the transaction appear on its face or are attached to it. The preservation of the voucher is, therefore, a matter of great importance.

In reference to these vouchers, great diversity exists. The vouchers that form the basis of entries on the general journal are numerous and varied, histories of the most varied character.

The general journal is the general clearing house in which affairs of all kinds are harmonized and the most minute transactions adjusted. A petty difference of a shilling is set right with all the circumstantiality that characterizes the adjustment of millions. In such minuteness, carried out with merciless exactitude in every branch of the service and in connection with all classes of men, rests the protection of corporations.

The vouchers that make up the general journal file consist of approved bills, certified statements, transcripts of contracts, summaries of leases, transfers, adjustments of differences, and others of which no classification is possible.

Journal vouchers should be numbered consecutively as they are entered, commencing with number one each month. They should be labeled and filed away in the order in which they are numbered and entered.

In a certain sense the auxiliary journals described in a preceding chapter are vouchers.

Each auxiliary journal in turn also has its file of vouchers kept by the compiling officer. They consist of the reports, abstracts and statements made by agents, conductors, storekeepers and others who have anything to do with the receipts or disbursements of the company. After being examined and corrected they are filed away so that each and every entry on the side journal may be verified at any time.

When the number of returns from agents and others warrants it they may be bound monthly in a cheap but durable form for preservation. If the number is small, they may be arranged in volumes and bound quarterly or yearly, as circumstances justify.

Returns and papers that cannot be bound should be systematically filed, so that they may be secure and easy of access.

CHAPTER XII.

REGISTER FOR ENTERING VOUCHERS AND BILLS.

The Register of Vouchers embraces a summary of bills due.* It should not be closed until some time after the period it covers has elapsed (say the fifteenth of the month), so as to afford time for the receipt and entry of all bills that a company owes.

By reference to the form of the record it will be seen that provision is made for inserting a concise description of each bill. This description occupies for each account but one line in the book. The book is so arranged that the thing to which the bill is chargeable is named directly opposite the description.

The register of vouchers is thus the clearing house for accounts of this nature. It is at once simple, easily kept and inexpensive.

Many of the accounts, however, to which vouchers are charged are merely preparatory; thus, a voucher for material is charged to the purchasing agent or the general material account. If the material is received at a storehouse, that particular storehouse is charged, and there the charge remains until the material is disbursed,

* See Form No. 3, Appendix B.

when the thing upon which it is used is charged by the local accountant.*

Vouchers for fuel are charged directly to fuel, wood or coal, as the case may be. Many vouchers (those not emanating from departments that render stated returns) are charged on the register directly to the operating, construction or other account affected.

At a time agreed upon the register of vouchers is closed and the total footings are drawn off and forwarded to the proper officer to be entered as a part of the disbursement accounts of the company for the period covered.†

The register of vouchers may be so arranged that the date of payment of each voucher with the number of the check paying the same may be inserted opposite the entry of the bill. This will be a source of great economy. At the close of each day's business (when this plan is followed) the vouchers paid, as shown by the cash book, are so recorded on the register. Vouchers

* See book "Disbursements of Railways."

† In order that a company may know at all times what its unpaid vouchers amount to, it may credit its vouchers on the general ledger to an account to be known as, say, "Audited Accounts," the accounts affected being charged. When an audited bill is paid it may be charged on the cash book to "Audited Accounts." In this way, by striking a balance at any time, the amount of unpaid bills is ascertained. Where the business of a company justifies it two registers may be kept, one for bills in favor of individuals, and one for bills in favor of transportation companies. As ledger accounts are kept by most transportation companies with other companies, the vouchers in such cases are frequently not paid directly in cash, but are credited in account. It will, therefore, facilitate matters somewhat to have a separate register for transcribing such vouchers.

credited in accounts merely are so noted. The vouchers against which there is no insertion constitute the unpaid bills. Thus it becomes very easy and simple to draw off a balance sheet at any time of unpaid bills; this is necessary as a verification of the general ledger and for other purposes.

There is another register in use for recording bills due to a company.*

By reference to the blank it will be seen that it is very much like the register of vouchers described above, with this difference, that the amounts are credited to various accounts instead of being charged.

At a time agreed upon this journal is closed and footed and the recapitulation of amounts certified to the proper officer for entry on the general ledger. The result is, finally, that "Various persons" (or whatever the name of the account may be) will stand charged with the gross sum while the accounts affected will be severally credited. The transaction is just the reverse of that involved in connection with audited bills due by a company. When the debts embraced in the various persons register are collected the amount is credited on the cash book to the account charged.†

* See Form No. 4, Appendix B.

† When the transactions of a company justify it, a separate register may be used for recording bills against railroad companies, which bills, instead of being collected directly in the way of cash, are charged in ledger account against the company interested. The case is generally analogous to that of the journal for registering vouchers in favor of railways already referred to.

CHAPTER XIII.

ROUTINE OF RETURNS.

In the arrangement of accounts it is presupposed that the results are all finally focused in the general ledger. The general accounting officer may be called a bookkeeper, treasurer, auditor or controller. It is not material. Systems should not be dependent upon the agent who performs the work. And in reference to the statements or returns transmitted by officials along the line, their value is not affected at all by the system of bookkeeping at headquarters. The returns are or should be such as are necessary to the elucidation of affairs.

To enable the general reader to better comprehend the subject I will describe the channels through which returns commonly (though not invariably), reach the accounting officer. Thus, pay rolls for train and station forces, and operatives employed on the track, are made by the division accountant, or the superintendent. Sometimes the track rolls are made by the civil engineer.

Whoever sends in the rolls also returns to the accounting officer a statement giving the distribution thereof, i. e., shows what accounts should be charged and the amount to be debited to each.

The data for making the pay roll and distribution statements are made by agents, conductors, road-masters and foremen along the line.

The pay roll for locomotive employes and men engaged in shops, storehouses, and the department of buildings and bridges, is made by accountants connected with the shops and storehouses. They also keep the time of the men and the accounts to which it is chargeable.* With the roll they make a return of the accounts chargeable.

The salaries of officers and employes at head-quarters are certified to some officer, who makes the pay roll and distribution showing the accounts to which it is chargeable.

The pay roll for men engaged in labor of a special character, such as construction work, is made by the person in charge; a certified statement of the accounts to which the roll is chargeable accompanying it.

Material is charged on the books at headquarters to the shop or storehouse where it is stored.†

A record of material disbursed at shops, storehouses and elsewhere is kept from hour to hour by the local accountants in charge. At the end of the month this record is closed and transmitted to the proper officer, who credits the shop, storehouse or department interested and charges the accounts designated.

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* These accountants are called storekeepers.

† If it has not yet reached a shop or storehouse, it should be charged pending such receipt to the officer certifying to its purchase.

Fuel is charged when purchased directly to fuel. Returns for fuel received, on hand, consumed and sold, from month to month, are made by the persons in charge. These returns are examined and consolidated for the different divisions and the result certified for entry on the general books, fuel being credited and the proper accounts charged.

The aggregate amount of the pay roll and vouchers in favor of individuals and disbursements of fuel and material constitute the charges of a routine nature.

Contrariwise, what is due to a company for material and fuel sold, labor performed, or for any other account or purpose, is credited. It is in some sense an offset against the large charge for material, fuel and so on. So far as these credits go they are summed up very much as disbursements are, and constitute regular routine work. Many other transactions come up for record each month on the general books in connection with disbursements, but the foregoing involve the bulk of the clerical work of a railroad.

Elsewhere some of the more important forms necessary to sum up as a whole the disbursements of a company are referred to.

The facts recounted in these returns are not retranscribed after reaching the general bookkeeper. He merely uses the totals. After being thus used the returns are bound in book form and constitute a part of the permanent records.

In order to facilitate work and save labor, a special ledger or record book may be provided for retranscribing the recapitulation that accompanies each sheet.*

Returns for expenditures should be examined item by item as they are received at headquarters.

If at any time the management desires details of an account, they may be ascertained from the distribution books on file. The design should be to provide a plan that will preserve all original data and obviate the clerical work of retranscribing.

Avoidance of clerical work in the preparation of statistics that may never be needed should also be striven after.

Upon the subsidiary ledger for disbursements referred to, separate headings should be opened with every account affecting construction, equipment, operating, material, individual debtors, and so on.

In many cases it will be necessary to divide an account under the head of different divisions.

The ledger in question is used to sum up all returns for disbursements from every quarter. When thus summed up, the totals are given to the general bookkeeper, who enters them upon his journal and ledger. The foregoing describes generally the methods observed. Details are not important. However, I may refer to one or two of importance that occur to me.

* See Form No. 6, Appendix B.

Upon receipt of the pay rolls they should be examined in detail and the footings verified. The total amount of each pay roll should agree with the statement accompanying it, showing the various accounts to which the pay roll is chargeable. One thus verifies the other.

As soon as a pay roll is examined and approved for payment it should be forwarded forthwith to the paymaster, so that the details of his office may not be delayed or unnecessarily neglected for lack of time to give them attention.

CHAPTER XIV.

AUDITING AND PAYING BILLS.

In auditing accounts it is desirable that the system under which the work is performed should be impersonal. In every case the concurrence of at least two officers, acting independently, each being conversant with the facts, should be necessary to the payment of money.

Such a system is especially valuable in connection with the purchase of railway supplies. One officer should make the purchases; another should receive and inspect the goods when bought.* Still another officer should approve the account for payment.

Where such a system is not in vogue it does not necessarily follow that improper practices occur. The deservedly high character of railway officials precludes so rash a supposition. It is apparent, however, that the opportunity for such practices may exist where these proper methods are not observed. Their introduction, therefore, cannot but afford a company a higher guaranty of faithful service.

* This is the system practiced in connection with the purchase and delivery of the supplies and munition required by the War Department of the United States government.

The minutiæ observed in connection with the making of vouchers and auditing of bills for payment is described elsewhere.*

Vouchers for material and fuel should be certified by the officer making the purchase. They should be in accordance with the receipted invoices of inspectors, storekeepers and supply clerks. Accounts thus verified carry with them the evidence of authenticity. They should, however, still receive the approval of the paying or auditing officer.

For the purpose of obtaining connected and substantiated records, and for other reasons, cash disbursements, including those of a general or special character, should be made only by the treasurer or by his authority on forms provided for the purpose. The authenticity of each account should be certified to by the persons whose office it is to perform the duty. No payments should be made save in this way. It will, however, sometimes occur that the imperative nature of a claim renders it impossible, as well as inexpedient, to await the regular auditing of the account. Occurrences of this kind are not frequent. When they occur, however, the payment or authorization of payment should proceed, as in other cases, directly from the treasury department, and should be made under specified rules.*

Practices necessary to secure due accountability in the paying of money are not always what

* See book "Disbursements of Railways."

they should be, and unless arbitrary rules are adopted and enforced great looseness will characterize a service.

Methods differ with different companies. The general intent, however, is to make the treasurer the disbursing officer in all cases. When this custom is not observed the evasion is rather unintentional than otherwise, I think. Men are led to adopt innovations without stopping to consider their character or what they are likely to lead to. Thus, a traffic officer or claim agent will collect money from a traffic officer or claim agent of another company in order to settle some account. Instead of turning the money over to the treasurer and having payment made by voucher in due form and recorded where it may afterward be easily found, he pays the amount directly to the payee. This *modus operandi* has the merit of directness, but is objectionable. It is easy to see in the case recited that the disbursement rests very largely in the discretion of the disbursing officer; moreover, the transaction is not known on the general books, and in case it ever comes up again the receipts and records may consequently not be forthcoming as they would if systematic provision were made, as it is in the treasurer's office. Every man should stick to his own particular business. Moreover, money should not be paid except with the concurrence of two independent officers. In the case recited, as in all others, a voucher should be made and audited in favor of the payee. The amount of the voucher

should be charged to the company responsible, and the money, when it was received, should have been placed to the credit of such company as a set-off against the said charge. Thus, two responsible officers will be conversant with the transaction and payment. Moreover, the papers will be in the regular file of the company, where they will naturally be looked for if required. This last is important, as duplication of claims can only be avoided by such concentration.

Too great formality, it may be said in conclusion, cannot be observed in connection with cash disbursements. It is only by such observances that the agent is taught accountability, and that due responsibility can be enforced.

As already intimated, vouchers are made by the officials who incur the debt. If for supplies, they should be verified by a co-ordinate officer who knows that the supplies have been received.

All papers that belong to or are necessary to explain a voucher or fix its authenticity should be attached to it. All the facts should be explained, either upon the face of the document or in the papers that accompany it. Thus every bill will be complete within itself, carrying with it evidence of its justness. After a voucher has been thus made and certified it is in shape for registry preparatory to its approval and payment.

When the voucher is paid the receipt should be appended thereto. Thus the transaction is com-

plete in every respect. Railway practices, however, differ in this respect. Some companies do not take receipt for payment on the original voucher, but prepare instead a copy therefor. This practice has merit, without doubt, otherwise it would not be followed. But many do not believe it can withstand criticism; to pay on a copy they say is, manifestly, to increase the danger of payment being made upon erroneous or fraudulent bills. The copy, it must be remembered, is not approved by the officer who approves the original, but by a subordinate. Why pay money, they say, upon the word of a subordinate when the original is at hand and so much more conclusive? Moreover, why multiply the possibilities of clerical errors and thus incur the risk of weakening, if not invalidating, the receipt?

Besides, the labor of copying vouchers involves an expense proportionate to the number of bills a company has.

Where the idea first originated it is impossible to say. Probably in the early history of railways. Doubtless in the desire of some official to retain the original voucher in his office instead of allowing it to go to the treasurer for payment and receipt.

When copies are used by the treasury in paying, the original voucher is filed away somewhere by somebody as evidence that the copy *is* a copy. Making and signing this copy aggrandize the office where it is made. It also renders the machine more complicated.

When payments are made upon duplicate bills those who make and vouch for the copies become of necessity highly trusted servants.

We do not find the system of duplicating vouchers (and only occasionally then) except where the accounts are divided between the treasurer and an accounting officer. Then the accountant, under cover of enforcing salutary checks upon the financial agent, sometimes usurps his prerogatives, as in this case.*

The system being seemingly unnecessary, besides being cumbersome, its beneficiaries seek to give it a semblance of usefulness. Accordingly, we are not surprised to hear them descant on the danger of intrusting original vouchers to the treasurer lest they be lost! Moreover, the accountant requires the originals to perfect his network of checks and balances!

The cost of copying the original voucher, the danger of fradulent practices, the risk of clerical errors, and other objectionable features, are all unnecessary.

However, perhaps I am too positive in my statements.

When the payments of a company are made upon original vouchers the latter should be filed with the treasurer; they are his authority for paying. When payments are made on duplicate

* Wherever this is the case he should have the title of Financial Agent, or something equally appropriate, added to the one usual to his office.

vouchers the duplicates should be filed with him.*

Vouchers should be entered on the cash book on the day they are paid.

The voucher should be signed by the payee, and when signed should be stamped "Paid," thus preventing its use a second time.

When it is necessary to pay a voucher at a place off the road, the voucher should not be sent to be receipted, but a receipt should accompany the check to be attached to the bill upon its return duly signed.†

Forwarding a check through the mail or otherwise with a receipt involves little work and prevents the possibility of loss of the voucher—a highly valuable document to the paying officer and company.

Upon the return of a receipt, properly signed, the copy or impression preserved thereof by the treasurer should then be canceled; uncanceled copies will thus always indicate the unsigned receipts outstanding.

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* Or the vouchers may, if thought desirable, be removed from his custody, a receipt being given him in full therefor and in lieu thereof by the company.

† This rule may be safely disregarded if the voucher can be forwarded by express, or other secure conveyance, or the payee is a responsible party. A convenient plan is to send the voucher with an indorsement thereon to the effect that when properly dated and receipted it will be accepted by the payor as a sight draft. This plan obviates the necessity of drawing a check and affords ample safeguards, as the company is not required to pay the voucher until it is receipted.

This plan is simple and affords an economical method of keeping track of vouchers that have been paid and charged upon the cash book, but for which the treasury has for the moment no receipt.

I may say in passing that the indorsement upon the back of a check or draft is the most conclusive evidence that can be produced that a receipt is *bona fide*, and for this reason careful and discreet officials very generally prefer to pay vouchers and accounts with a check or draft rather than with currency.*

In settling accounts expedition and economy can be secured by sending petty vouchers to station agents to pay. Care should, however, be exercised not to send an account for so great an amount that it cannot be paid from the receipts for one day, otherwise the daily remittances will necessarily have to be discontinued until the bill is paid. The treasurer will thus lose the easy supervision over the cash that is necessary. And for the same reason no bill should ever be sent to an agent to pay except through the treasurer. Under any other method the financial officer will lose the control over receipts necessary to enable him to secure their prompt and full transmission.

* When a new check is issued to take the place of a missing check, a bond of indemnity for at least twice the amount should be exacted from the person in whose favor it is drawn, unless the fault is the company's or the fact is patent that the check has been destroyed. No bond should be accepted for less than $100.

The uniform and continuous flow of cash from every agency that occurs where daily remittances are enforced should never be interrupted without the knowledge of the treasurer, for the reason that this current is the index by which he keeps himself advised of affairs.*

* In forwarding bills to agents to pay, a printed form of letter of instructions accompanies the vouchers. A record of all such vouchers is retained in the treasurer's office. When the vouchers are returned the fact is noted on the record. In this way the record at all times discloses the disposition made of vouchers. For instructions to agents observed in paying vouchers, see "Disbursements of Railways." In paying vouchers, it is needless to say that care must be exercised by the treasurer to make any deductions there are. In some cases book accounts are opened to avoid omissions of this kind, the vouchers being credited to the account. Some railway companies do not pretend to remit in favor of railroad companies, but credit the vouchers in account, charging to such account reverse items, balance only being paid or collected.

CHAPTER XV.

PERFORMANCE OF LOCOMOTIVES.

The cost of locomotives and the expense of maintaining them and the absolute dependence of railroads upon these machines make their performance a matter of the utmost consequence to the responsible managers of railway property. Where there are many locomotives those in charge of their management require carefully compiled statistics in order to keep themselves advised of what is going on. One of the means of doing this is through the so-called monthly locomotive report—a collection of data recounting the work done and the cost thereof—not only for each machine but for the machines collectively. Much of the information thus collated is also used in compiling the accounts of a company.

The report, when completed, shows the fuel, oil, waste, tallow and other supplies used by each engine, and by the engines as a whole; also the amounts used per mile run by each engine, and by the engines as a whole. It is not difficult to appreciate the benefits that a company may derive from comparisons thus intelligently and methodically made.

Generally, it may be said, the report when printed gives the name of the maker of the machine, the diameter and stroke of the cylinder, the number of driving wheels, diameter of same, weight and class of engine, and so on, in order that due allowance may be made for peculiarities of construction. Practically, however, this information is perfectly well known to those concerned in studying the report. To tell an operating officer the number of an engine is to instantly call to his mind its builder and peculiarities of construction and working.

In connection with the information that the locomotive report affords, the load that is hauled by each engine is also ascertained, as it is apparent that cost of supplies and labor should be relative thereto. This feature of the subject, however, with its attendant questions and reservations, is discussed in another place, so I will not refer further to it here.

In compiling the locomotive statistics or report everything that affects the performance of locomotives must be remembered and allowance made therefor, otherwise comparisons will be worth little.

The locomotive report should, among other things, afford the following information:* Number of engine; name of engineer; mileage made by locomotive (classified as explained elsewhere);† cost of fuel; cost of oil, waste and tal-

* See Form No. 19, Appendix B.

† See Appendix of "Disbursements of Railways."

low; wages of engineers and firemen; cost of wipers and dispatchers for each engine (Note.—The wages of wipers and dispatchers may be charged to each engine on the basis that the mileage of each engine bears to the miles made by all engines*); cost of repairs for each engine; total cost for each engine; number of miles run to ton of coal or cord of wood; also to pint of oil, pound of tallow and pound of waste; average cost per mile run by each engine for fuel, oil, waste and tallow; also for enginemen, firemen, dispatchers, wipers and repairs; and, finally, the total cost per mile run.

In compiling the report freight engines should be allowed an equitable amount (added to their mileage) for switching;† engines employed on working trains should also be allowed so many miles per hour, according to the work in hand; switching engines should also be allowed an arbitrary mileage.

For the purpose of arriving at the mileage of engines and the names and wages of engineers, a summary is made, on the engineers' and firemen's time books, of the operations of each engineer, viz.: total mileage made by the engineer, giving the name and mileage of each engine he has run.

* A more equitable basis, perhaps, would be the number of times each locomotive was wiped and dispatched, as reported by foremen of engine houses.

† When a freight locomotive hauls a local freight train, a greater relative percentage is allowed for switching than in the case of other freight trains. Whatever allowance may be made an engine it should be stated in the report.

The summary is posted into a journal for the purpose of collecting the particulars of each engine, from every source, so that aggregates can be ascertained.

In this journal the number of the engine is entered at the top of the page, the numbers following each other in numerical order.

The columns of the journal provide: for the month; name of division; names of engineers; number of hours allowed different engineers; rate allowed each engineer; wages of each engineer; number of miles run by engine, classified as already explained.

The amounts are footed. The footings show the total mileage by each engine, and total wages of engineers.

In order to arrive at the particulars for firemen, the same process is observed, the details being posted in the journal on the page opposite that for enginemen.

For the purpose of consolidating the wages of engineers, firemen, dispatchers and wipers (for insertion in the locomotive report), a blank is provided, having columns for number of engine, number of days worked by engineers, wages of engineers, number of days worked by firemen, wages of firemen, total wages of engineers and firemen, wages of wipers and dispatchers, and, finally, the total wages.

Particulars of oil, waste and tallow used are collected and consolidated upon a journal (provided with necessary columns, etc.) in much the

same manner that is observed for consolidating the mileage of engines and the wages of engineers and firemen. The details of expenditures for engine repairs are also consolidated in a journal provided for the purpose, in the same manner.

In reference to fuel consumed by engines, statements are compiled by the accountants at the various storehouses, giving the quantity of fuel furnished each engine, separate statements being furnished for coal and wood. These statements are afterward consolidated for the different divisions of a road.*

The expenditures for each engine having been ascertained, they are then inserted in the columns of the locomotive report. The amounts are then footed across, so as to give the total for each engine. Each column is then footed and the totals by divisions shown, and, finally, at the foot of the last sheet, the grand total.

The locomotive report, as explained, gives the average cost per mile run for each class of

* The columns of the blanks for consolidating the particulars of fuel used by each engine are: Number of the engine; Division; Quantity; Cost. Opposite the number of the engine the quantity consumed is entered in the column for the division where procured. The total quantity so entered is then footed across and entered in the columns for total quantities. These total quantities are multiplied by the average rate charged for fuel for the whole road, and the total cost of fuel used by the engine inserted in the column provided. The total footings of the last mentioned column should (after combining the cost for coal and wood) agree exactly with the cost of fuel used by engines as certified to the general accounting officer.

expenditures. To obtain these averages, each class of expense for each engine must be divided by the total mileage made by such engine, and the amount inserted in the columns opposite, aggregates being figured in the same way.

The total cost per mile run should agree with the aggregate cost per mile run for different classes of expenditures as described.

In order to get at the particulars of fuel the total number of miles run by each engine is divided by the total quantity of fuel consumed, and the average entered in the column provided; aggregates are figured in the same way.

In like manner the total number of miles run by each engine is divided by the number of pints of oil, pounds of tallow and pounds of waste used, and the average number of miles run to each entered in the column provided; aggregates are figured in the same way.

The locomotive report is then footed.

As locomotives are employed more or less on different divisions, it follows that the mileage does not belong wholly to one division. In such cases the engine appears in the statement on the division on which it has made the most mileage, the fact being noted that the engine has also been employed on other divisions.

The column of the locomotive report designed for remarks is used to describe the kind of repairs each engine has undergone, location of switching engines, points between which engines were operated, locomotives in the shop, etc.

A statement is made on the last sheet of the report comparing the figures for the current month with the same month in the preceding year, giving increases and decreases.

As the information comprised in the locomotive report is of great value it is of importance that those having the matter in charge should exercise care in arranging and compiling it.

The following statements made by locomotive clerks will be of use to the accounting officer for statistical purposes, viz.: Monthly report of mileage made by each engine employed in construction work; name of engineer, number of days employed; number of miles run; pay of engineer, fireman, wiper and dispatcher; description of the work upon which the engine was engaged; total mileage of engines (classified as described in the time book for engineers and firemen), giving miles run on each division separately.*

While the locomotive report embraces particulars of work performed by each engine, the practice of compiling such a report is not universal among railroad companies. It is modified or changed to suit the requirements of particular managers. Each company, it is probable, possesses the data for such a report as I have described, but it is not particularized in all cases

* At the close of the fiscal year a summary should be made, giving the miles run on each division, also a classification of the mileage made on each.

in the manner specified. One reason why it is not is the considerable cost it involves. Some companies content themselves with a summary; a report of the aggregate services performed by locomotives on each working division of the line, viz.: total miles run in each class of service; cost for enginemen; cost for dispatchers and wipers; cost for roundhouse laborers; cost of fuel; cost of oil; cost of waste; cost of repairs and miscellaneous supplies and labor; average cost per mile run for each of the foregoing items of expense; total quantity of fuel, oil, and waste consumed, each being given separately, and, finally, the average number of miles run by locomotives to a ton of coal, pint of oil, and pound of waste.

In connection with this it will be interesting and useful to state the total mileage of cars hauled by passenger locomotives, and total ton mileage hauled by freight locomotives. Also, average amount of fuel, oil, and waste, stated separately, consumed per unit of work performed, i. e., per one hundred miles of passenger car mileage, and per one hundred tons of freight train tonnage hauled.

If the locomotive report is compiled in the manner I have described in the preceding pages a summary of it, such as that just referred to above, will be necessary. This summary should show the aggregates for each working division. Superintendents of divisions find this useful. Among other things, it enables them to compare the cost of operating on different divisions and

branches of a property. The master mechanics and their assistants compare not only the cost for different divisions, but also cost for particular engines.

NOTE.— In addition to what I have said in the foregoing chapter in reference to compiling statistics for each engine, similar statistics for the engineers are thought, by some companies, to be useful.

Thus, these statistics should show number of miles run by engineer, tonnage hauled, average tonnage hauled per train, quantity of fuel, oil and waste used, average number of miles run to a ton of coal, pint of oil and pound of waste; also, the average quantity or cost of each of the foregoing supplies used per one hundred miles of tonnage.

CHAPTER XVI.

AUDITING FREIGHT RETURNS.

The examination of the freight returns of agents and others is one of the most important duties connected with the fiscal affairs of railroads.

The methods used in auditing such returns (for the purpose of discovering and correcting omissions and mistakes) differ widely. They are, however, all orderly and exhaustive.

Circumstances have much to do with the case.

No matter what the system may be, however, the way bill is the foundation upon which the structure is built. It is the source from which information in regard to all freight traffic is obtained. It is important, therefore, that it should be in evidence and correct. To insure these objects it must be surrounded with safeguards.*

Whatever differences may characterize methods of accounting in other respects, it is essential that every way bill should be examined at headquarters. Such examination will disclose more or less errors of classification, rates, extensions, footings

* For a description of this important document and the uses to which it is put, the reader is referred to "Freight Business and Affairs."

and so on. Errors in rates are especially to be deprecated, as carelessness or ignorant disregard of rules in this respect may embroil a company in many ways beside occasioning direct loss.

Two methods of revision of way bills are in use. One is by examination of copies sent by agents to headquarters as soon as the original way bill is made; the other is by revision of the original way bill itself, which is sent to headquarters by the agent who receives it. Each of these methods has special advantages, and were it not for cost both should be employed.

By the use of copies officials at headquarters are enabled to correct more quickly erroneous routing of freight, unauthorized through billing or *vice versa*, and to get notice thereof to the receiving agent in advance of or coincident with the arrival of the freight, thus enabling him to act intelligently and in season.

The advantages of waiting until the original way bill can be sent to headquarters for revision are that it shows on its face a complete history of the transaction, especially inspections and changes made en route and at destination, thereby enabling the freight auditor to make the necessary corrections that through ignorance or carelessness might be omitted by the receiving agent. Moreover, the original bill is much more easily handled than a copy, owing to the difficulty of obtaining good letter press impressions.

Where it is the custom to revise the original way bill, cases will occur rendering it necessary

to use copies instead. This will be the case with all interline bills, i. e., where the way bill and freight pass to another company.

When an error is discovered in a way bill, the forwarding and receiving agents are both notified, so that they may correct their records and collect or refund as the case requires, rendering their returns afterward accordingly. Notification should be prompt, so that the returns of the forwarding and receiving agents will harmonize, and subsequent labor be saved thereby at headquarters in correcting and balancing the accounts. Whatever method is used, the original way bill should be finally lodged at headquarters, as it will be useful in settlement of claims and other differences that will arise.

To make the examination of freight traffic returns complete, the original way bill or duplicate (as the case may be) should be compared with the abstract of the business returned by the agent, after which the abstracts should be compared with the conductor's returns for freight hauled. Examination can be made still more thorough by comparison of the abstracts with records of cars hauled as kept by the car accountant.*

The returns (including the abstracts) of local freight forwarded and received should reach headquarters on or before the seventh day of the month succeeding that for which they are made.†

* Some of these comparisons are rarely, if ever, made. They are, however, useful, and may be made occasionally if not uninterruptedly.

† In the case of the so-called daily system, to which I have already referred in this volume, they are sent daily.

The amount of freight forwarded should agree with the amount received. Thus the tonnage and charges (of each kind) reported by station A as forwarded to station B should correspond with the amounts station B reports having received from station A. If they do not so agree, the account should be examined in detail and the difference discovered and corrected.

The abstracts of freight rendered by agents should be footed at headquarters; afterward these totals should be compared with the summary.

When the audit of freight returns has been completed, the balances (i. e., the footings of various columns that affect the agents' accounts) should be certified to the accounting officer for entry on the general books. Afterward the freight auditor should recapitulate the aggregate charges for local freight forwarded and received, to ascertain whether the amount of freight forwarded agrees with the amount of freight received. In the event the two do not agree he must re-examine the accounts and locate the difference. The accuracy of the accounts is, in a measure, verified by agreement of amounts forwarded and received.

In reference to joint freight accounts with other companies, when freight is rebilled at the junction where it is transferred (i. e., where it departs or arrives) the account is kept with the agent at that point. He reports the traffic the same as he does freight delivered to or received

from private parties. When freight is billed through between stations on different lines, the method of adjustment varies, but to prevent delays and misunderstandings, the accounting officers of the companies interested arrange in advance as to the time and manner of settling the account. It is generally as follows in America: The way bill does not show the division of earnings as between the companies interested, i. e., the amount due each company. That is figured on the gross.

The accounting department of the forwarding road sends or causes to be sent daily, to the accounting department of each road over which a way bill is routed, a legible copy thereof.* To further insure accurate and full accounting the department also forwards to the companies interested a daily statement of the business, giving date of way bill, points from and to, local charges, advances, etc.

The receiving road is held responsible for the collection of unpaid charges. It is also required to send notices to roads in interest of any changes it makes. If the changes are not accepted by the companies, they return notices with explanation. For changes made by forwarding companies, the latter send notices to the roads in interest. If no exceptions are made, the figures thus reported are used in settlement.

* This copy, however, is not required by companies that revise the original way bill if the freight is billed to a station on their own lines.

Receiving roads prepare and send to the forwarding company abstracts of way bills received up to the time the account is closed, i. e., bills dated prior to the first of the month in which the statement is rendered. They are accompanied by division sheets showing each road's proportion of the earnings, also balances due. All intermediate roads interested are also furnished with copies of the abstracts and division sheets. These abstracts and division sheets are forwarded so as to reach their destination not later than the eighteenth of the succeeding month, unless some other date may be agreed upon. If, for any reason, reports are not forwarded in time to reach their destination on the date stated, the receiving company notifies the forwarding and intermediate companies by telegraph (on the date specified) of the amounts of their respective proportions, balances due, and so on.

The abstracts and division sheets constitute in every case the basis of settlement between interbilling companies.*

All balances are settled by draft on or before the twenty-fifth of the month.

In settling the receiving road pays to intermediate companies their proportions of the business, regardless of whether the charges are prepaid or not, prepaid charges and advances being arranged between the forwarding and receiving roads.

* If errors or omissions occur they are carried forward into the account for the succeeding month.

Any discrepancies found by the forwarding or intermediate roads in the abstracts or division sheets rendered by the receiving company are taken up with the latter in the form of a statement of differences, it being understood that such statements shall be in the hands of the receiving road on or before the fifth day of the second succeeding month, at which time (it is agreed) the correction account shall be closed. The differences embodied in the statement, if found correct by the receiving company, are included in a special account issued by it, the amount of the same being included in the next division sheets.

The receiving road also includes in this special account, any differences it may discover in the abstracts or division sheets as rendered by it for any previous month, even though attention may not have been called thereto by the other companies in interest. Good faith is, it is understood, to be observed in every case.

Each intermediate road in the line is furnished with an impression copy of the special account by the receiving company.

Where the business is large (to be determined by the companies in interest), drafts or remittances are sometimes made weekly for approximate balances, the amounts to be communicated by telegraph or otherwise. In such case the final payment, to close the account, is made on or before the twenty-fifth of each month—the regular day for settling joint monthly accounts.

Interline way bills, it may be said, can be made only from and to such points as may be agreed upon by the companies in interest.

In carrying out the foregoing plan of settling for joint freight business, it is required that agents at junction stations shall furnish their respective companies with daily returns of through bills received from or delivered to connecting lines. These returns are afterward compared with the abstracts of billing to see that all bills are included in the latter and that no freight has been billed through that should have been re-waybilled at the junction.

The abstracts of joint freight received from a connecting company are compared with the returns of local agents. They should also be compared with the revised duplicate or original way bills.

As soon as the balance (as between the companies interested) is agreed upon, the freight auditor notifies the proper officer of the fact.* The balance then becomes subject to sight draft by the creditor company.

There are many methods in use for settling through billing, each of which varies from that just outlined.

One method is to show the division of rates upon the way bill. When such billing reaches the junction where it is delivered to another company, the agent of the delivering company

*For form of journal used in reporting joint traffic, see Form No. 11, Appendix B.

computes the proportion of charges due his company, delivers the way bill with the freight, and collects the amount from the agent of the other company, together with any advances or miscellaneous charges that may have accrued up to the time of delivery. In the event charges are prepaid, he deducts from the amount shown on the way bill as prepaid the proportion due his company, and pays the balance over to the agent of the other company. In making settlement a statement is made by each agent of the business delivered by his company, during a certain period, and the difference between the two statements is paid to the creditor company either by cash or draft. The length of time for which such settlements are made may be either daily, weekly or monthly.

Another method is to omit the division of rates or earnings on the way bill, and require from the agent at the junction a statement of freight received from and delivered to each company on through way bills. This statement is sent to the freight auditor either daily, weekly or monthly, according to the period for which settlement is to be made. The freight auditor makes the divisions of earnings upon these statements and settles with the freight auditor of the connecting company upon balances.

Still another method is to establish a clearing house where earnings upon through billed business between several companies are apportioned. When this method is in vogue the agents of

all companies interested render abstracts to the clearing house of all interline business received and forwarded by them. The clearing house checks the accounts of one company against another and apportions the account between the different companies.

In reference to the miscellaneous receipts that enter into the accounts, such as switching, dockage, car service, etc., not shown on freight way bills, a return may be made of the same monthly or as often as agreed upon. A return should also be rendered of amounts remaining in the hands of agents from over-collections, credits, etc. These amounts may be certified to the general bookkeeper on the "Agents' Freight Journal,"* or separately, as desired.

In connection with overcharges, the great bulk of claims are due directly by the company, the agents having been charged with the full amount collected. In such cases the overcharge should be refunded by voucher. No such voucher should be approved, however, without the certificate of the freight auditor that the overcharge actually occurred and that the company, and not its agent, is responsible. Upon thus certifying to a voucher, he should note the fact across the original record so as to prevent duplicate payments.†

* See Form No. 9, Appendix B.

† Needless to say this is only one way of settling. Every company follows its own lights in such matters. This is true of every detail of business. I do not pretend to any monopoly of information or method. M. M. K.

In reference to the carriage of milk, special methods are observed by carriers. A ticket usually takes the place of a way bill, the ticket being attached to the can.* It is much simpler, less expensive and more effective than a way bill. To facilitate auditing, a daily return of milk tickets for each train is sent to the auditor from the station where the milk is loaded. This return is compared with the canceled tickets sent in by conductors. The returns of milk tickets and accounts are examined by the freight auditor, as others are, with a view to determining the correctness of the rate, extensions, footings, and so on.

In reference to the joint use of cars by carriers, the table in the appendix† illustrates the journal used in summing up the returns of the car accountant's office.

Amounts due other companies (for the use of cars) are credited in the month in which the cars are used; amounts due *from* other companies for use of cars are charged upon receipt of the returns therefor. When the transactions for a month are thus passed the balance of the account is struck and the amount drawn for by the creditor company. Notice of draft is not required by the great bulk of the companies, the general understanding being that as soon as the balance is

* See book "Freight Business and Affairs."

† See Form No. 12, Appendix B.

known by the creditor company it may draw for the same. This has long been the practice in regard to joint ticket and freight accounts. It will, it is probable, be the universal practice in time in regard to all interroad accounts.

The summing up of the freight and other accounts, by the freight auditor, should be in the hands of the accounting officer on or before the nineteenth of the succeeding month.

CHAPTER XVII.

AUDITING PASSENGER RETURNS.

One of the duties of the accounting department of a railroad is to see that the revenue from tickets is duly accounted for. To facilitate this the ticket auditor's office is created. It is an auxiliary arm of the service, aiding in the collection of earnings and the prevention of impositions. It affords, among other things, protection against the introduction and use of duplicate or fraudulent tickets, and is intended to compel the prompt reporting of tickets sold by agents and others. The office is indispensable to every company.

By making free use of the information gleaned by traveling auditors, and with the aid of many curious and subtle devices, impossible to enumerate here, but at once effective and economical, and which will readily suggest themselves to accounting officers, the ticket auditor may throw around the issue, sale and accounting for tickets safeguards that cannot be attained in any less practical way.

One of the most important features of the ticket auditor's office is the collecting, arranging and auditing of the tickets and other tokens col-

lected from passengers. The work is simple but very voluminous in the case of a big road. Some of the primary details observed may be noticed. In the first place those engaged in the work should learn the name of every ticket office and the order in which it appears, and on what division, so that they will know its location without having to refer to the list of stations. This knowledge is necessary to enable them to work rapidly and accurately. They must also learn the name of every railroad.

In assorting and examining tickets, they are required to keep a sharp lookout to see that tickets are properly canceled, and when not so canceled, to correct the omission.

The cases into which tickets are distributed, upon their reaching headquarters, should be arranged so as to provide a compartment for the different classes of tickets sold at each station and large enough to accommodate the tickets for a week or month, as the rule for checking requires.

A compartment should also be provided for each foreign road. It should be sufficient to hold all tickets collected in any one month.

The utmost care should be exercised in assorting, arranging and checking tickets with returns to see that none is lost.

It should be kept in mind that the main objects of auditing tickets (so far as routine work is concerned) are to see that every ticket sold is duly reported; that tickets are collected and

promptly returned by conductors; that tickets are charged against the person selling the same.

These results may be secured by careful and co-operative effort.

In auditing ticket collections a record should be made of tickets not reported, and an investigation should be instituted to ascertain the facts and adjust the discrepancy.

Conductors' Ticket Collections.—Conductors should send to the ticket auditor, immediately upon arrival at their destination, all tickets and substitutes therefor collected by them, including ticket coupons, mileage ticket covers, stop-over checks, passes, etc. Before doing this they should be punched with the particular form of punch assigned the conductor. Moreover, the tickets should be punched so as not to destroy the number or other distinguishing marks.

In the event no tickets are collected conductors should send a blank form, giving date, number of train, etc., stating thereon that no tickets had been collected.

Tickets should reach headquarters in such a way that they can be distributed from the envelopes directly into the ticket cases, or otherwise as may best facilitate work. Conductors should, before sending them in, arrange them, generally, as follows, viz.:

Local tickets sold at each station should be arranged in the order of stations, facing one way

and right side up, the whole secured by a rubber strap or string; local interline tickets should be arranged in a package by themselves, in the same order as local tickets; foreign interline tickets should be arranged so that the tickets issued by each road will be together, and the whole fastened together with band or otherwise, as directed for local tickets; commutation, excursion and other tickets should be arranged separately, in the same general way as directed above; mileage ticket covers, mileage coupons, etc., should be inclosed in an envelope to be provided for the purpose; the last rule should be observed with stop-over checks and tickets connected therewith.

Local Card Tickets.—These tickets, when returned by conductors, are distributed directly into the ticket cases, preparatory to being audited.

At the close of each day, week or month (as may be the rule of the company) the returns for local tickets sold at each station should be compared with the tickets collected.

In order to facilitate this, the audit clerk arranges tickets in numerical order, from the lowest to the highest number. This can be most easily accomplished by using a board containing one hundred squares the size of the ticket. The squares are numbered consecutively. The numbers of tickets missing are noted on the return. The numbers are entered subsequently in the record book of missing tickets.

When missing tickets are finally received, the record book of missing tickets is referred to and a pencil run through the number of the missing ticket, a distinct color for each week in the month being used. The month in which the ticket is returned should be inserted directly above the number thus erased.

In entering the numbers of uncollected tickets, a different kind of ink is used for each week in the month, if returns are rendered weekly. The initial of the month is inserted directly after the number.

When an unreported ticket is collected, the number of which is in advance of the closing number on hand, the agent should be instructed to take a similar ticket bearing the lowest number on hand and renumber it the same as the unreported ticket collected and put in the place of such unreported ticket in his case, giving the ticket auditor the number of the ticket so altered, so that the unreported ticket may be changed to agree therewith.

Half Fare, Excursion and Miscellaneous Tickets.—These tickets are sorted and distributed in pigeon holes preparatory to being compared with sales, the same as others; the compartments for local tickets may be used if necessary. It is better, however, to have separate boxes for each. When the tickets have been distributed they

should be checked with the number of tickets sold, as shown by the returns.*

Tickets good for more than one trip should have a duplicate or stub attached. This duplicate should be detached by the conductor and sent to the ticket auditor when the ticket is first presented for use. The possession of the duplicate ticket by the auditor enables that officer to ascertain whether tickets are promptly accounted for by agents selling the same or not. Without the duplicate the department would have no means of knowing in the case of yearly, half yearly and other tickets good for more than one trip, until the ticket was collected at the date of its expiration, and not then in many instances, as such tickets are frequently never collected but are retained by the holder. A report by conductors of tickets in use of the class referred to is, as a rule, impracticable in consequence of the time required, conductors having barely time to perform the routine duties of canceling tickets, collecting fares, etc. Such returns should, however, be required occasionally and at irregular times from conductors, but reliance must be placed, in the main, on the stubs or duplicates collected and returned as described.

*In order to facilitate work, daily and weekly returns of tickets sold are sometimes required; the tickets as entered thereon are afterward used to verify the monthly return upon which the agent is charged.

Home or Local Interline Tickets.—A compartment should be provided for each interline ticket station, and the tickets collected distributed therein, preliminary to comparing the returns with the collections.

Foreign Interline Tickets.—The returns for tickets sold by foreign companies should be assorted without delay and compared with the tickets collected, any errors or omissions being noted and reported to the company interested.

Conductors' Stopover Tickets.—The stubs of stopover checks are returned with the passage tickets upon which the checks were issued, in an envelope provided for the purpose. The auditor should compare the stub with the passage ticket and enter upon the face of the former, in the place provided, the station number (destination) of the ticket. He should also note upon the face of the stub what the exchange is for. If for a foreign coupon, the name of the road issuing the same should be indorsed on the back of the stub.

To facilitate sorting and subsequent checking and examination, the case into which the tickets are assorted should be divided into compartments.

In sorting the stubs the ticket auditor should see that no checks are issued out of numerical order. Should any checks be found to be so issued, the attention of the conductor issuing the same should be called to the fact, and an explanation required.

Stopover checks should be examined to see that the rule as to limit of time has been observed, and that they have been issued in accordance with the rules. They should then be compared with the stubs, as to station numbers, etc., and sorted into a case corresponding in arrangement to that described for the stubs.

In checking the stubs with the passage tickets, the ticket auditor should see that the number of the stopover check has been indorsed by the conductor on the back of the ticket; he should also see that the envelope for stopover checks has been filled up.

A statement should be made at the close of each month, and placed on file, of the number of outstanding stopover checks, giving the numbers of such checks in numerical order. When a check outstanding is returned, a pencil should be run through the number of such check on the statements.*

Record Books.—The following books are useful for purpose of record at headquarters: A record of missing local tickets, a separate book being kept for each class of tickets; a record of unreported tickets; a record of duplicate tickets; a record of trains.

Immediately upon receipt of the ticket reports and returns the work of auditing the same com-

* The custom of limiting the "life" of tickets to immediate use and a continuous ride is rapidly doing away with stopover tickets or checks.

mences. The process cannot be accurately described. The most labored analysis is observed. The figures are examined, compared, footed, and finally after being found correct are posted upon the journal used by the general bookkeeper.

When accounts are audited monthly, returns of tickets sold by agents should reach the ticket auditor by the first train after the close of the month.* If in auditing returns an error is discovered, notice of the fact is forwarded to the agent or company making the mistake.†

In reference to details of work, when an agent's report of interline tickets sold has been examined and corrected, it is passed to an apportionment clerk, who makes the division of the through rate. Afterward it is entered on the stock book of interline tickets. This book contains a record of all interline tickets sent to agents by the storekeeper or person who has charge of the stock of tickets. It is intended to contain an accurate statement of tickets on hand at each agency, allowance being made for tickets sold, spoiled, returned, etc.‡

* In some cases accounts are rendered by agents daily; in others weekly or monthly.

† In the latter case the company is requested to indicate when the mistake will be corrected.

‡ A debit and credit record is necessary in the case of interline tickets for the reason that it is the practice to send supplies from a general stock. The numbers do not always run consecutively, therefore, either on the record or on the returns. In reference to local tickets, the numbers sent to each agent follow each other consecutively from start to finish. It is, therefore, comparatively easy to keep track of sales, number on

The data supplied traveling auditors in examining accounts at stations and for making transfers of agents is largely procured from the local and interline ticket stock books referred to

A statement is rendered the companies interested monthly of local interline tickets sold. It includes particulars of the tickets and amount (proportion) due the carrier.

In this way balances are ascertained between carriers.

As soon as a report of local interline tickets has been examined it is entered upon the apportionment book, or record of interline tickets sold.* The proportions due the lines in interest are entered in the places provided. Amounts are then entered. When the extensions have thus been made the book is footed.†

When the amounts due various companies for local interline tickets are ascertained, the amount due each company is formally certified to the accounting officer.‡

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hand, etc. It will be noticed that the word local is also used in connection with interline tickets sold over other lines. This is to distinguish them from tickets sold by other companies, which are called foreign interline tickets. The term "home," instead of local, is coming to be more and more used by railroad companies to distinguish their own issues of interline tickets and returns from those of other companies. Some roads, however, call their own issue of interline tickets "foreign" tickets. But such use of the term is confusing.

*See Form No. 22, Appendix B.

†The proportion belonging to the several companies, including the company issuing the tickets, should agree with the total amount of sales, and the fact of such balance is presumptive evidence of the correctness of the extensions and footings.

‡This is done on the "Railroad and Transportation Companies' Ticket Journal." See Form No. 10, Appendix B.

Afterward the work of making returns of local interline tickets sold, to the companies over whose lines such tickets were sold, is gone through with.*

The proportions belonging to the several companies for interline tickets are arrived at in various ways; sometimes by arbitration; sometimes on the basis of mileage; sometimes upon the basis of local tariffs; sometimes upon the amount and character of the business. The form number of an interline ticket indicates its route; by referring to the chart the route is found in the order in which the coupons are attached to the ticket.

All the peculiarities of a traffic are considered in making the through rate and apportioning it

* The return in question is identical in many respects with the division book already referred to. It gives: Point *from* which the ticket was sold; place *to* which the ticket was sold; number of the form (this number indicates the route of the ticket, each route being provided with a different form number); commencing number of the ticket sold, also closing number (the difference between the two indicates the number sold when the numbers follow consecutively); through rate; proportion of such rate belonging to the particular company to which the return is to be sent, and, finally, the amount due such company for all tickets sold between the points *from* and *to* as described. Adding the amounts thus given, the total sum due to the company is ascertained. When the return in question is completed no delay should occur in forwarding it, so that as little delay as possible may be occasioned the company interested in writing up its books, but more particularly so that the balances for the month may be promptly struck. Returns of interline ticket sales (if diligence is observed) should be ready for mailing to the companies interested by the 25th of the month, never later than the 30th. See Form No. 21, Appendix B.

afterward to the several lines. Divisions are also constantly changing. Because of this latter fact it requires the utmost vigilance in apportioning joint earnings to the companies interested. It is also desirable that the person performing the work should possess a good knowledge of the topography of routes. He must, moreover, be accurate, expeditious and efficient as an accountant.

Upon receipt of a return from another company the amount is at once certified to the proper officer, so that he may strike a balance and draw for the amount, or honor a draft if the balance is the other way.*

Once a month the amount due from each foreign company, as shown by its returns, is entered in the railroad and transportation companies' ticket journal,† for use by the general bookkeeper.

For the purpose of facilitating settlements, by common consent, no changes are made in a company's return of its sales of tickets over other lines. A record is made, however, of mistakes and omissions and the company at fault notified and asked to make corrections in the next return; if there is an omission to report tickets, the tickets omitted are also inclosed for purposes of examination, to be returned afterward.

* The difference between the amount due from a company for its sales over a foreign line during any one month and the amount due to it for the sales of the foreign line for the corresponding month constitutes the balance; this balance is, or should be, at all times subject to draft at sight.

† See Form No. 10, Appendix B.

As no changes are ever made in the interline returns of a company, it follows that the balances arrived at by the companies in interest always agree exactly. This simple method enables the creditor company to ascertain the amount due it without delay and renders a clearing house absolutely valueless.

In reference to the method of settling collections between companies for extra baggage, the amounts are usually embraced in the return for interline tickets for the month in which the collections are made.

In reference to balances due from agents for local ticket sales, the amount is certified to the accounting officer upon the agents' ticket journal after the returns have been audited.* The process is very simple. However, the tickets reported as sold are compared with the tickets collected.

Sometimes tickets, after being stamped or having the destination inserted, are not used. In such ways many tickets are spoiled. Across the face of such tickets, agents write in ink "void," inserting the date. These tickets are sent to headquarters with the returns.

The amount due from conductors for collections is verified so far as possible by the ticket auditor and certified to the accounting officer on the conductors' journal.†

* See Form No. 7, Appendix B.

† See Form No. 8, Appendix B. The amount of each daily trip return is stated by the ticket accountant, so that in the

In reference to the extra baggage business of agents, returns therefor may be forwarded to headquarters by the first train after the close of the month. As soon as the accounts can be audited (say not later than the nineteenth) balances are certified to the accounting officer for entry on the general books.*

The amount of extra baggage collections for property destined to points on other roads (interline baggage) or to stations at which there are no agents, is compared with the way bills and otherwise surrounded with safeguards necessary to secure to each company interested accurate returns.

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event the aggregate amount charged to conductors (as shown by the journal) does not agree with the amount of cash remitted, the account may be examined in detail. The agents' ticket journal and conductors' journal can be arranged in one book, a part of the book being apportioned to the former and a part to the latter. Or if a separate journal is used for the collections of conductors, the total thereof may, if desired, be merged on the agents' ticket journal, with the totals of same, for entry on the general books, thus making only one entry on the latter for the totals of the two journals.

* The returns made to the ticket auditor or officer who audits the excess baggage accounts, exhibit in detail the revenue on baggage forwarded and received. Each return should be accompanied by the stubs of the excess baggage cards used in forwarding, and the strap checks (or way bills) for baggage received. The former are used in checking the amounts collected by the receiving agent, the latter in checking the forwarding agent. A return from train baggagemen of the destination, number and amount of excess baggage way bills in transit constitutes a valuable safeguard. Indeed, it may be said to be indispensable in auditing excess baggage received from or delivered to other lines; in such cases, an intermediate company has no evidence of its through traffic except that embraced in the returns of its baggagemen, unless, indeed, coupon way bills are used for such traffic.

CHAPTER XVIII.

CONCERNING THE REMITTANCES OF AGENTS AND OTHERS.

Great diversity exists in the rules and regulations governing the remittances of agents and conductors. Upon some lines daily remittances are required of the total amount collected; upon others, remittances are made every other day, or semi-weekly or weekly. Many companies, however, have no definite rule as to time of remittance or amounts, agents and conductors being expected to exercise their judgment in the matter.

Funds passing through the hands of agents and others should be governed by clearly defined rules.

The availability of the revenue of a railroad as well as its safety will be best secured by hurrying it forward into the treasury with the least possible delay.

It was the universal custom at one time for agents and conductors to remit to the treasurer. This practice has, however, been changed by many companies, remittances being sent to the bank where the company keeps its account. Under this system the number of hands through

which the money passes is lessened and the cost of handling is borne by the bank. This expense is an important item, and as many banks will not pay interest upon accounts likely to fluctuate so widely as those of railway companies, the least return they can make for the use of the money is to perform the clerical work of handling it.

Under the plan of sending remittances directly to the bank, the treasurer makes a check from day to day for such cash as he needs in payment of wages or the settlement of other accounts. The money thus comes to him counted and assorted in packages of such size and denomination as he wishes, and he is saved all trouble and expense in connection therewith.

Packages containing remittances should be opened and counted by a teller of approved honesty. If the teller is not entirely trustworthy, the fact that he can appropriate a part of the contents of packages without detection will be a constant temptation to him. On the other hand, he has no protection against the misrepresentations of dishonest or careless persons among those making remittances; thus he may at any time be accused, unjustly, of tampering with the remittances.

In the disputes that will arise between agents and conductors and the bank officials in reference to the amount packages contain, the treasurer will find it difficult to judge who is in the wrong. But as the bank will insist upon its count, it will sometimes be necessary to require

the work of counting the money to be assigned to a new man, or that measures be adopted by the bank to ascertain definitely in reference to the reliability of its teller.

The same disputes and suspicions will occur if remittances are made to the treasurer, so that nothing is gained by having them sent to him.

The duty of receiving and counting the money remitted from day to day is an exceedingly disagreeable one at best, a duty that the most upright and courageous official will esteem himself happy in not having to perform.

When money is sent to the bank, it should render the railroad company at the close of each day's business an abstract of the amount received from each agent and conductor. This statement should be footed. Along with it the bank should send the statements or letters of advice which it received with the remittances. These should be entered by the treasurer upon the cash book, and if found to agree (when added together) with the amount reported by the bank, the statements may be stamped with the date they are credited and returned to the agents and conductors as receipts; this plan obviates the necessity of the treasurer's writing a formal receipt, and thus much time and cost are saved.

Formerly the cash book in use required that the name of the agent or conductor should be inserted every time a remittance was received. Where there was a large number of persons remitting at short intervals, the duty of entering

the names and amounts thus required considerable time. It was also necessary that the remittances made by an agent or conductor should ultimately be grouped together, so as to form a connected record; this required a ledger account—a very laborious method, occupying much time and exceedingly expensive. Moreover, unless the utmost care was exercised at ever step, the extent of the work invited errors in retranscribing, thus throwing the accounts and books out of balance.

The necessity of finding a simple and inexpensive substitute for this cumbersome and expensive system suggested to me the introduction of the "agents' and conductors' cash book."*

It is exceedingly comprehensive, and the information it contains is crowded into the least possible space, a single leaf of the book being enough to accommodate the remittances of forty agents for a month. The name of the agent or conductor is inserted in the first column of the book; opposite the name, and upon the same line, the amount remitted is entered in the proper column—columns being provided for each working day in the month. The remittances of an agent for a month thus occupy one line. At the close of the month the amounts remitted by him are added across and the total inserted. By adding this last column the aggregate footings of agents and conductors are given for the month; if the total footings for the different days in the

* See Form No. 17, Appendix B.

month, added together, agree with the aggregate column, the fact of such agreement is evidence of the correctness of the whole.*

By the use of the side cash book I have described, only the total amount of cash remitted by an agent or conductor need be entered on the side ledger in which his account is kept. If the ledger does not agree with the balance claimed by the agent, the remittances as entered in detail upon the side cash book may be referred to and compared with the returns of the agent or conductor and the difference located.

The agents' and conductors' cash book will be found to greatly reduce the expenses of a company.

When more convenient, separate cash books may be used for agents and conductors.

The general cash book of a company embraces the particulars of receipts and disbursements.†

From this book and the journals referred to elsewhere all matter embraced in the general ledger is drawn.‡

It is of the utmost importance that accuracy and perspicuous clearness should be observed in

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*At the close of each day the amounts entered in the column for that day are added and the total inserted. This total is carried to the general cash book, on which the cash receipts from all sources are shown.

† See Form No. 16, Appendix B.

‡ Subsidiary ledgers are posted from the general cash book, the general ledger journal and the side journals.

entering transactions on the cash book. It is a clearing house of vast importance.

The general cash book may, for convenience and in order to economize space and labor, be arranged so as to afford columns for various kinds of information, say, for entering folio of ledger, name of the account, numbers of remittances, explanatory or descriptive column, amount,* and finally, a column for the total amount.

On the credit side of the cash book columns may be provided for inserting the folio of the ledger, name of the account, treasurer's number,† audit or register number, nature of disbursement and amount.‡

The difference between the footings on each side of the cash book constitutes the balance. This should agree with the balance as shown upon the general ledger.§

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*Several columns may be used for amounts, thus one for entering amounts received from agents, one for conductors, railroad companies, individuals, land agents, and so on.

† This number is entered on each cash voucher and affords a convenient means of tracing the latter afterward.

‡ Separate columns may be provided for inserting payments, say a column for vouchers, railroad companies, drafts of agents, pay rolls and so on; finally, a column for inserting the total amount paid.

§ On large roads, owing to the great number of vouchers which are paid daily, it will be found convenient to have a subsidiary cash book in which to record payment of vouchers. This added facility affords ample time to the bookkeepers for posting to the side ledgers the cash receipts and payments, which otherwise they would not have, as the general cash book is in constant use. This subsidiary cash book, called the audited accounts cash book (see Form No. 18, Appendix B),

The general cash book is closed and balanced with the cash on hand at the end of each day. No exception should be made to this practice.

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should give information in detail concerning vouchers paid. The total of the vouchers paid each day as shown on the audited accounts cash book is carried to the general cash book. The audited accounts cash book bears the same relation to the general cash book in respect to vouchers paid as does the agents' and conductors' cash book in regard to moneys received from agents and conductors.

CHAPTER XIX.

VALUE OF THE CLASSIFICATION OF OPERATING EXPENSES.

The management of a road is enlightened and the property benefited by an accurate classification of disbursements. Great diversity existed in the early days of railroads in America in reference to the classification of operating expenses. No two managers or accounting officers agreed as to details. Each advocated that which adapted itself most readily to his understanding or the needs, real or supposed, of his company. In some instances the differences were not based on anything except the fancy of the officer introducing them. But in many cases they arose from inherent differences in properties. Thus an expense account of great importance upon one line, like keeping the track clear of snow and ice, was unknown upon another, and so on. When differences are of this character, provision must adapt itself thereto.

Now and then the division of operating expenses was microscopical; extended beyond the horizon of ordinary conception. This is a weakness of statisticians; to elaborate unduly. In such cases the inquisitive owner, very likely,

realized everything he wanted to know except cash dividends. His money was wasted in explaining why his property did not have any net earnings. He knew to the utmost farthing where every cent had gone, but for his own subsistence he had only elaborate tables and statistical formulas. This is statistics run riot.

The bulk of railroad companies, however, were satisfied with a very simple division of operating expenses. Upon many lines it only embraced what may be called the natural divisions. Quite a number of companies sought to sum up their accounts and apportion their expenses as between the passenger and freight traffic. The manner in which this was done, and the lack of value of the work when completed, I refer to elsewhere.

In reference to the classification of railroad expenses, it is not putting it too strongly to say that a classification adapted to the uses of governments is not generally adapted to the practical wants of railroads. The managers of the latter require such minute subdivision of accounts as may be necessary to enable them to judge, by comparison and otherwise, the economy that has been exercised. Government returns are valuable for purposes of exhibiting results. From the government standpoint it is not material whether a particular account is relatively great or small, for the reason that to make such information of value the local circumstances surrounding the expenditure must be known and recited. This is manifestly impossible.

An important thing in classifying operating expenses is to separate cost of maintenance from other outlays.

Money expended upon buildings, bridges, machinery, road bed, track, and similar purposes, adds directly to the value of a property by prolonging its usefulness or adding thereto, while cost of fuel and lubricants, or money paid on account of transportation expenses, contributes nothing whatever of a material character to a plant.

The government standard classification of operating expenses generally recognizes this necessary and important distinction.*

A division of operating expenses formed to exhibit the maximum amount of information is particular to take cognizance of distinctions of this nature. They are vital.

Operating expenses may be divided almost beyond belief. In determining details we should endeavor to arrange outlays under such headings as are most convenient and desirable for illustration and comparison. Only a few general accounts are essential for publication.† It is important to

* For particulars of this classification, see "Disbursements of Railways." This classification in the United States is the outgrowth of joint efforts on the part of accounting officers of railroads and the officers of the general government and of the various states. It is, in many respects, an admirable exhibit, and is being quite generally adopted by the railroad companies. It will repay study to those interested in such matters. These I respectfully beg to refer to the book, "Disbursements of Railways," noticed above.

† Such as "Cost of Maintenance," "Cost of Conducting Traffic," "General Expenses," and so on.

the owners of properties that statistics should be restricted to those things that are valuable to owners and managers.

It does not matter so much what a classification may be, as that it is observed continuously, so that comparisons of particular expenditures for different periods and lines may be accurate. To insure this, the constituent elements of accounts must be so particularized as to leave nothing to the discretion of the distributing clerk.

There are many things connected with the exhibits of a railway that the merely curious esteem important, but that serve only to eat up revenues that should be divided among owners or expended for renewals and betterments. For this reason only practical railroad men should be trusted with the duty of formulating statistics; great preparation is not necessary. If the established tables are found to be insufficient at any time, additional information may be compiled as needed. Sufficient for the day is the evil thereof.

In examining exhibits we consider them relatively. If the exhibit is for a month we compare the results with the month corresponding in the preceding year, or such other month as fancy or our judgment dictates.

We pursue the same course with quarterly, semi-annual and yearly exhibits. In this way we secure a valuable basis for pursuing our investigations.

In all cases, before a management can be commended for reductions in cost of operating,

it must show whether the saving is brought about by reduction in cost of conducting transportation, or in expenditures for renewals and repairs. If in the former, it is gratifying; if in the latter, the examiner desires to know whether the reduction is simply an expense deferred, or whether it is brought about by the use of better or cheaper appliances, or more correct methods of business.

The most elaborate division of expenses possible possesses in itself little value. The grouping of particular items under different headings affords, at best, but a hint. Such information must be aggregated and compared for a great number of years, and must be considered also in detail in the light of actual occurrences, such as amount and nature of traffic, prices, season, etc. Before the examiner can judge of the operations of a company for a particular year he must possess the details of which the different headings are made up, and collateral facts incident thereto. Really, it is only when he has examined a property and analyzed its disbursements, item by item, that he can pass judgment.

A general examination of the items that make up the expense account of a road will, in many cases, prove delusive. This is especially so when the expense extends over a short period only. A few salient features in every exhibit appeal stoutly to the eye, and through the eye, unconsciously, to the judgment. The exhibits of railway companies, like those of great banking houses and

governmental institutions, examined superficially, are like unto a broad landscape, over which trees are scattered. The trees give the scene expression, simplify its perspective, and heighten its effect on the beholder. Nothing could be more charming than such a view. When, however, we come to go over the ground, inch by inch, and examine it in detail, we will quite likely discover sunken basins and impassable ditches and much inconvertible and worthless land, not perceptible from a superficial view.

Particulars of cost of operating vary greatly from year to year from natural and unavoidable causes: these must be taken into account in forming judgment. Speaking generally, the condition of railroads fluctuates widely between the maximum and minimum of efficiency. A year (or more likely a few years) of prosperity enables the managers to put a property in a high state of efficiency. This period is followed by its natural counterpart, a time of depression and decay, when business slackens and the earnings of properties fall off. To tide over this period successfully is the test of management.

CHAPTER XX.

VALUE OF DIVISIONS OF EARNINGS AS BETWEEN PORTIONS OF A LINE.

Only ordinary intelligence and honesty are required to arrive at the net earnings of a railroad company; so much money has been earned, so much has been expended. These facts are shown by the returns. When we seek, however, to discover the constituent elements of the general heads and assign them a given place, that moment our labor ceases to be conclusive. The accepted classification of earnings, for instance, while supposed to be devoid of all ambiguity, is not so in fact, as there are sources of revenue that it is not possible to assign with accuracy to any particular class. This is also true of expenses.

Exhibits are correct in the main as regards classification, but not to the extent it could be desired.

The standard classification of railway earnings, freight, passenger, express, mail and miscellaneous, is sufficiently full, but in assigning particular classes of earnings local customs prevail. Thus, in the United States, express earnings cover only the amount received from the express companies, under their contracts with the railroads.

In other countries, however, where this business is carried on directly by the railroad companies, all receipts from parcels are embodied under one head. Extra or excess baggage earnings and similar receipts (really parcel traffic) are included by us as miscellaneous earnings.

The miscellaneous earnings of a company are generally understood by us to be those that do not arise from the carriage of persons or property, such as the mileage of cars, rents, storage, demurrage, trackage, loading, unloading, transferring and switching.

It would have been better, perhaps, if all goods carried by passenger trains had been included from the start as express matter. The change is not likely to be made now, however. Such a division would have done away with many vexatious questions that have arisen as to disposition of different kinds of earnings, such as those arising from the carriage of milk, circuses and so on, when handled by passenger trains.

Discrepancies in the classification of earnings are not material, however, so long as uniformity is observed, except when we seek to use earnings improperly classified as a basis for determining matters predicated on particular kinds of traffic. In such cases divisions are untrustworthy to the extent earnings are incorrectly distributed.

Earnings are frequently used as a basis for determining divisions of operating expenses, but when these divisions are understood to be only approximate the discrepancies are not material.

Much more important, however, than anything contemplated by railways in their use of such statistics are the values that governments are prone to ascribe to such formulas. Thus they have been known to seek to ascertain the earnings of particular portions of a line by dividing the earnings on the basis of miles hauled. Nothing could be more misleading.

What is said elsewhere in regard to dividing operating expenses applies to a division of earnings when made without reference to the unities of the service. We may know what receipts are as a whole, but when we attempt to apportion them arbitrarily to divisions, our labor, while attended with intelligence, is untrustworthy. We may, without difficulty, trace the source, direction and terminus of each item of revenue, but we cannot apportion it between particular parts of a line except after the most painstaking inquiry.

A formula for dividing earnings between the different sections of a line is based on the relative distance the traffic is hauled; no other method affords, generally, so correct a basis. It fellows, consequently, that this division is used where the purposes of accountants require a division of joint business without their having any means at hand for dividing it equitably.*

* Earnings may be divided between the sections of a line on the basis of mileage of road; mileage of trains; tonnage; passengers carried, and so on. Divisions of earnings to be accurate must take cognizance of miles hauled, cost of hauling, terminal expenses, value of the business, competitive influences, control, and so on.

It is in every case fallacious. There is no equitable method of a fixed nature for determining what the divisions of a traffic are. Divisions as between co-operating companies are in every case the result of private agreement based upon the peculiar circumstances of the case: where interests are not equal, the apportionment is based upon the difference that exists.

The apportionment of earnings as between two or more independent lines acting together receives the constant thought of those in charge of the properties interested. The frequency with which divisions are changed emphasizes the fact that they are determined by the hourly exigencies of a business. Arbitrary formulas cannot recognize such distinctions.

An attempt to divide the earnings of railroads upon an arbitrary basis is very much like saying that the wants of sections are alike; that their intelligence, enterprise and wealth are the same; that all points contribute alike to the production of business.

Divisions of joint earnings are based on the importance of lines as factors. This basis is constantly changing.

Earnings are made up of through and local traffic; of that which passes over two or more lines or that which belongs wholly to one. Through traffic is largely the outgrowth of effort, while local trade falls naturally to the local carrier. It is, however, none the less the outgrowth of intelligence and wise foresight.

In determining the divisions of joint earnings or through business, competitive influences govern largely. No one except those who handle the traffic can form any opinion in regard to these.

Any division of earnings not based on the exigencies of the traffic is worthless, and will result in detriment rather than good if used for general purposes.

It follows that no method of dividing the earnings of a particular line can be fixed in advance or without intimate knowledge of the nature of the business. No exhibit of railway earnings based on such divisions (except for purely local uses of a special nature) is worthy of regard. Whenever published divisions of earnings are based on stated formulas (irrespective of conditions of traffic at the time of making the division), the formulas by which the apportionment is arrived at should also be published so that the value (or rather lack of value) of the exhibit may be known to the reader.

The enormous interests represented by railroads, and the vital importance to a country that attaches to their affairs, render it of importance that those having to do with the publication or use of their returns should exercise the greatest care in the arrangement and compilation of their statistics, with a view to the prevention of misunderstanding.

While the desire of statisticians to afford varied information is to be commended, their zeal should

be governed by thoughtful regard, lest information having the effect to mislead creep in, to the great injury of valuable industries. This injury is certain to follow whenever apportionment of earnings or expenses of railway properties is made on an improper basis.

CHAPTER XXI.

APPORTIONMENT OF OPERATING EXPENSES AS BETWEEN PASSENGER AND FREIGHT BUSINESS.

The relation of expenses common to passengers and freight to the whole cost of operating a railroad, varies on different roads according to the property and the nature of the traffic. Taking the railway system as a whole, it is probable that fully sixty per cent. of the gross operating expenses relate, in common, to both classes of business.

The difficulty of apportioning expenses between divisions, noticed elsewhere, is greatly magnified when we seek to apportion them between different classes of traffic.

The property of a railroad is used in common for every class of business, as convenience and profit suggest. Many officers and employes are concerned uninterruptedly with the affairs of all the departments. Those connected with one branch serve others when the interests of the property can be advanced thereby. This co-operation is much more general than is supposed.

Thus, employes of the freight department, in their intercourse with shippers, lose no opportunity to advance the interests of the passenger

department. No charge is made against the latter for this service. But the equity of such a charge can no more be questioned than the value of the service. The efforts of the freight department to increase passenger traffic are reciprocated by those connected with the latter branch of the service.

The especial aim of everyone is the advancement of the particular department to which he is assigned, but he is also expected to serve his employer elsewhere when opportunity offers. The interest of employes in the property and their *esprit de corps* would lead them to do this even if it were not expected.

The distinctions that exist between different departments of railroads are generally not so great as is supposed, and, in many cases, are merely nominal. But while, in the actual conduct of business, the interest of every department is advanced by all, as occasion permits, yet in the preparation of accounts those connected with the passenger department are, as a rule, charged wholly to passenger business and those connected with the freight department to freight business, and so on. It would not be possible to do otherwise in the case of petty items without the direct intervention of the accounting officer and the presence of assistants in the different departments. The rivalry between the two traffic departments is great, and however correctly the apportionment might be kept (if it were possible to separate the service, which it is not in many

cases) each department would think it was charged too much; and it would be right in many instances, for in every case of doubt employes would give the benefit of any doubt there might be to the particular department with which they were connected. The interlapping expenses of passengers and freight agents are the first obstacles that lie in the way of a division of expense as between the passenger and freight business. However, they are simple and unimportant compared to others.

In dividing expenses those that appertain exclusively to the passenger and freight departments are thus charged, but where expenses are common to both, they are oftentimes so interwoven that the most painstaking accounting cannot separate them. A division, therefore, based on the relative operations of the two departments will result, it is probable, in as nearly a correct apportionment of cost as a more elaborate basis. It will be a guess merely in either case. Such basis is the relative mileage of passenger and freight locomotives; mileage of passenger and freight cars; passenger and freight earnings. There is no other, unless it be an arbitrary one founded upon particular features of traffic.

If we base apportionments on the relative mileage of passenger and freight locomotives, there is no trouble in arriving at a conclusion from that point of view, but, as a matter of fact, there is a large mileage made by locomotives not engaged directly in the service of either of

these departments, but in work affecting both. The relation of this to each class of business is not known. It must, consequently, be assigned arbitrarily. But as such basis would be speculative, it follows that results derived therefrom would also be speculative. What is true of locomotive mileage is also true of mileage of passenger and freight cars. There is a large number of cars that does not belong to any particular department, such as business cars and cars used in work trains. The mileage of such equipment comprises a large percentage of the whole. Upon what equitable basis can we divide such expenses between passengers and freight? There is no such basis. There can be none. Or, if it could be found in the case of one property, the basis would not apply to another, nor would it apply to the same enterprise for two successive years or months.

In attempting to divide expenses on the basis of passenger and freight earnings, we must necessarily include, under one head or the other, income from express, mail, and miscellaneous. In such a classification we might properly embrace express and mail as passenger business because carried on passenger trains, and we may observe this rule in regard to all business carried on passenger and freight trains, respectively. But how are we to apportion earnings derived from rent of buildings, lands and other neutral sources?

All collateral earnings may, indeed, be omitted in dividing the expenses as between passenger

and freight, but that would only complicate the situation. If we left out express, mail and miscellaneous earnings, we should also have to leave out the expenses incident to them. This would be impossible owing to the difficulties surrounding such a separation. So that while it strains the situation to merge these earnings under the general head of passenger or freight, yet it is better to do so than to attempt to determine the cost they severally involve. Hence, in any attempted division of expenses, the earnings of collateral departments must be merged under one or the other of the great heads, passenger or freight. The bulk of expenses are incurred directly on account of these two great departments of the service. They are the great factors; the axis on which everything revolves.

The attempt to apportion expenses between passengers and freight is interesting in its obstacles and the disputations it excites. Not only is the work largely dependent upon the judgment of the compiler, but like all other things that enter into the operations of railroads, the conditions are never the same upon any two railroads, nor probably for two successive months upon any particular road. Receipts and expenses are like a kaleidoscope, that cannot, by any possible manipulation, be made to present the same surface twice—always changing; always different; always having the same general coloring, but grouped differently. These changes are never unimportant, never mere hallucinations; they

represent physical phenomena. They are, therefore, material, and always to be regarded. The shadows in a forest come and go, varying with each recurring breeze; they cannot be weighed, nor analyzed, nor grasped. The accountant, in his efforts to depict exactly the affairs of a railroad, has problems as unsubstantial to deal with. It results that the conclusions he arrives at are incomplete. Attempts to divide expenses as between passengers and freight are cases in point.

The pulsations of trade are too subtle to be gathered up in tables or described in words. They are felt by those who look on just as we see the purchasing power of a dollar rise and fall in proportion as it represents a dollar's worth of labor or not, but the transformation is too subtle to be characterized.

In summing up the operations of railroads the accountant works by the square. He transcribes the proclamations of those about him. He has no inner light, no nervous sensibility, no reflex action. Hence, his results, while mathematically correct, never extend beyond arbitrary formulas. It is this feature that makes his labor so valuable when based on accurate data, and so worthless at other times.

The question of the practicability of dividing expenses as between passenger and freight business is one that has received much attention and that will continue to receive attention as long as railroads are operated. The relative profitableness of different kinds of business is dependent

upon expense. It is desirable both for the public and the carrier that such expense, if it can be ascertained, should be; if not, that we should know accurately the measure of confidence to be placed in statements professing to afford such information. This is the purpose of this chapter.*

In attempting to apportion cost as between passenger and freight, the work must be pursued in detail. We cannot, for instance, apportion contingent expenses as a whole. We must separate the account item by item. But, as the bulk of disbursements under this head will be common to both classes of business, it follows that we must determine the relative benefit derived by each and apportion the outlay thereon. In determining this basis we may use relative earnings, locomotive mileage or car mileage.†

What is true of contingent expenses is true of wages of laborers. Much of this work is expended in common upon both passenger and freight. It is so intertwined that a separation of it is not possible, except under some arbitrary rule. This is also true of agents and clerks; it applies also to supplies used at stations; it affects the distribution of legal expenses, and it renders a separation of disbursements for personal injuries impossible in many cases.

* It is gratifying to know that the determination of the government of the United States to insist upon a division of operating expenses as between passenger and freight traffic has been abandoned. The wisdom and propriety of this cannot be too highly commended.

† But, we may be certain in advance, that whatever basis we use, no two experts will acquiesce in its propriety.

The expense common to passenger and freight traffic represents an enormous amount. If it were capable of separation we should be able to tell the relative profitableness of the two great departments of railway enterprise, and might predicate many important things thereon. It is a great misfortune, therefore, that the separation is impossible.

An insurmountable obstacle that stands in the way of a division of expenses as between passenger and freight, is the question of the effect of weight and speed on cost.

All those whose evidence we highly esteem assert that the cost of keeping the equipment and roadbed in order (and of many supplies also) is directly affected by the weight and speed of trains. But no satisfactory means have yet been devised by which we may determine in what degree these elements affect cost.*

A specious method of dividing expenses common to passenger and freight traffic is the mileage of passenger and freight trains respectively. It

* "The relative cost of different speeds of trains has never been definitely determined. . . . Approximations. . . . have been framed in many quarters, and in some cases by careful experts. These may be near the exact truth or they may prove to diverge from it considerably."—*Letter of Jos. D. Potts, President Empire Transportation Company, to Special Commission on Railway Mail Transportation, Report, page 111.* "The same tracks are used for heavy freight trains, for light and heavy passenger trains running at speeds ranging from ten to forty miles an hour. It is therefore impossible to ascertain directly the cost of any given train." *Report of Special Commission on Railway Mail Transportation, page 17.*

is called the train mile basis. The total mileage of passenger and freight trains, respectively, is ascertained; expenses are then apportioned, as between the freight and passenger business, on the basis of such mileage. Under its operation a passenger train of fifteen heavy and costly coaches moved at the rate of sixty miles an hour, is not made to appear more expensive, so far as affects wear and tear, than a freight train of fifteen cars, moved at the rate of ten miles an hour. The train mile basis, it is apparent, disregards all the varied elements of weight and speed so noticeable in the actual operation of moving trains. This method of dividing expenses owes its adoption to its simplicity. Aside from this it has no value. In discussing the fitness of miles traveled by freight and passenger trains, respectively, as a basis for dividing expenses common to both kinds of traffic, one authority on railway matters says: "The speed of a passenger train is usually from two to two and a half times greater than the speed of freight trains, and on that account it would not seem unreasonable to estimate the cost of repairs of iron and adjustment of track per mile run the same for freight and passenger trains. It is true that on a perfectly smooth track the speed of the train would have but little influence upon the wear of the iron. In practice, however, there are more or less imperfections in a track, especially at the joints, and the wear and tear of the track must necessarily be increased as the speed of the trains increases. I fear that it will be impossible

to ascertain the exact amount of such increased wear, but am inclined to believe that the cost of repairs of track and its adjustment is very nearly the same for freight and passenger trains, when the relative weight of trains and rate of speed is about as above given; it can be fully demonstrated that upon a perfectly smooth track the wear should be the same per ton moved, whether the train moves at a high or low speed." How can this important fact be demonstrated? There is no such thing as a perfectly smooth track. The same authority says further: "The roadbed, ditches, ballast, cross ties, bridges, etc., must be kept in the same good order, and the same amount of money must be expended on this account, whether they are used by passenger or freight trains; therefore each class of traffic should pay proportionately to the train mileage." In other words, he would repudiate the well established fact that cost of operating is dependent on the weight and speed of trains. This is unreasonable.*

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* "There is a possible rate of speed which would produce a momentum and impart a wrenching of parts sufficient to work the speedy annihilation of both track and train."—*Letter of Jos. D. Potts to Special Commission on Railway Mail Transportation, Report, page 111.* "Force . . causes wear and tear of rails, fastenings, cross ties and ballast, and the expenditure necessary for their readjustment and renewal, and in the same manner operates upon the machinery and rolling stock."—*Letter of Strickland Kneass, Assistant President Pennsylvania Railroad Company to Special Commission on Railway Mail Transportation, Report, page 53.* "Speed increases the cost directly . . . it reduces the load, which is a much more serious thing than the

Not only is wear and tear heightened by increase of speed, but the tonnage moved is in the inverse ratio of expense. By increasing speed we heighten expense and decrease the load.

Considering the importance of an accurate division of expenses as between passengers and freight, it would seem as if conclusions based upon a thing so indeterminate as the velocity of passenger and freight trains (estimated on a basis of one to two or two and a half) were exceedingly unsatisfactory, to say the least, but such is the basis upon which the train mile theory rests. Unfortunately, however, this basis, poor as it is, is not accurate. Instead of the speed of passenger trains being from two to two and one-half times greater than the speed of freight trains, it is only about one-half greater in many instances. On lines leading from Chicago and representing

mere cost of the engine. A train to cover thirty miles an hour would cost more than a slower train, and the latter would drag half more carriages. I am speaking of locomotive cost. Every other account, such as signals, permanent way, etc., will increase with speed, because you must have your signals much better, and the cost of maintenance is greater, because the rails are damaged to the same extent as the engines. . . . If the speed were diminished the work might be done with fewer trains."—*Evidence of A. Sturrock, before the Royal Commission, page 884.* "I believe it will be found that the wear and tear of the road is mainly due to the heavy engines running upon it at from forty to sixty miles an hour."—*Evidence of I. P. Bidder, C. E., before the Royal Commission, page 831.* "We are obliged to run at much higher speeds than it is prudent to run for the good of the permanent way. . . . A slower speed . . . would certainly reduce the cost of the working expenses."—*Evidence of Sir Daniel M. Gooch, M. P., before Royal Commission, page 860.*

fifteen thousand miles of road, the average speed of passenger trains is thirty miles per hour, while the speed of freight trains is fourteen and four-tenths miles per hour. Between Chicago and the far West stock trains are run at the rate of twenty-five miles per hour, the average time of many passenger trains between the same points. Many "limited" trains average sixty miles an hour. Many other trains do not exceed twenty miles an hour. Within certain limits the speed of trains depends upon the nature of the traffic and the character of the road. On some roads trains are made up indiscriminately of passenger and freight cars.

The preceding comparisons, based on wide practices, demonstrate the worthlessness of the train mile basis.*

However, other extravagancies occur to us, like the comparison of a train of passenger cars weighing, when loaded, sixty tons each, and moving at a high rate of speed, with a freight train of vehicles weighing only twenty tons and moving at a moderate rate of speed. Moreover, a train filled with cars partly loaded occupies the same level in this division of expenses that a fully loaded train does.†

* Differences in the weight of trains are even greater than those of speed. Weight varies for freight trains all the way from a train of fifty cars heavily laden to a train made up of an engine and one car. Equally great differences are observable in connection with passenger trains. Such differences cannot be ignored nor overlooked.

† I have elaborated this question of the train mile basis to a greater extent, perhaps, than would seem to be warranted by

The same objections exist if cars instead of trains are taken as a basis of division; cost varies in every case, according to the load and the speed with which it is moved.

If it were possible to ascertain the relative percentage of cost of different classes of trains upon a particular road or track, this data would possess no value whatever upon any other road or track. Cost is directly affected by the kind, quality and weight of rails, by the curvature of the road, its grades, cuts and embankments, the character of the ballast, the elasticity of the track, weather, adequacy of the drainage and other like features.

Weight and speed being elements of cost, it is apparent that any variation in the weight of trains or the velocity with which they move will necessitate a basis of division arranged for each train, based on its weight and speed.

The practices of railroad companies, where they attempt a division of expenses, are not uniform. One corporation will estimate that one-third of its expenses belong to passenger traffic and two-thirds to freight. On another road two-fifths of the expenses will be allotted to passenger traffic, and three-fifths to freight traffic. The divisions are merely for local purposes, but their method of apportionment is probably quite as reliable an any other.

the reader, but it is seriously advanced as a means of determining the relative cost of doing the passenger and freight business; moreover, it serves my purpose, incidentally, of illustrating generally the folly of attempting a division of expenses as between different classes of traffic.

Tables exhibiting divisions of expenses are mere forms for recording guesses—estimates that may approximate the truth or may not.

Speed has a direct and positive effect upon both track and machinery.* Much that I have already quoted demonstrates this. "The speed at which an article is carried on a railway is an element of cost. It is well known to railway managers that on a double track, located on a heavy grade, the rails on the down grade are worn out faster than those on the up grade. *A priori* this would not be expected, for the reason that there is much more slip of the driving wheels in going up the grade than in going down, and the slipping of wheels is a potent element in wearing out rails, but experience shows that the greater speed of trains on the down track more than compensates for the difference in slipping. I have known rails of the same quality to be worn out on the down track in two-thirds of the time that sufficed to wear them out on the up track, with the tonnage not greatly varying, the number of engines and cars, of course, being identically the same. This would go to show that speed is an important element in cost."†

* "Increase in speed entails greater wear and tear, both in locomotives and in permanent way, and a larger consumption of fuel, and it is a moot point with railway authorities how far these extras are compensated by the additional work got out of the rolling stock."—*J. S. Jeans, page 119.* "The resistance of the atmosphere to the passage of a train is proportionate to the square of its velocity."—*Ibid.*

† Letter of William P. Shinn to Special Commission on Railway Mail Transportation. Report, page 66.

Not only is speed an element of cost, but cost increases approximately with the square of the velocity. Such, substantially, are the conclusions of many eminent engineers. "The active force of a train running at the speed of thirty miles per hour will be found to be one hundred per cent. greater than that of the same engine running at twenty miles per hour, while the increase of speed is but fifty per cent. It is this force that causes wear and tear of rails, fastenings, cross ties and ballast, and the expenditure necessary for their readjustment and renewal, and in the same manner operates upon the machinery and rolling stock for their general derangement and deterioration. . . . We know that the wear upon rubbing surfaces of machinery increases as the square of the velocities, so that again the wear and deterioration of the moving portions of an engine running at thirty miles an hour is over one hundred per cent. greater than that of an engine running at twenty miles per hour, while the increase in oil, waste, etc., is proportional. . . . Increase of speed reduces the effective force of an engine. . . . We would state that owing to the 'back pressure,' before noted, the increased velocity cannot be retained without a higher pressure of steam in the boiler, which can only be obtained by a further use of fuel, while a waste in fuel is caused by increased speed, owing to the greater draught through the boiler tubes, carrying with it portions of the fuel without combustion or diffusing heat."*

* Strickland Kneass.

Nothing could be more definite or sweeping than this carefully worded statement. The cost entailed by increased speed is not confined to the rails and the adjustment of the track, but embraces cross ties, track fastenings, ballast and machinery. It also increases the cost of fuel and lubricants. The late John B. Jervis, a man of high scientific attainments, and a noted engineer, said: "We have no exact data to determine the relative cost of different rates of speed; some have estimated it to be as the squares of the velocity; others a lower rate of difference. My own opinion is that on the whole the former is not far wrong. With two engines of suitable weight, one to haul a train at the rate of twenty miles an hour, the other to take the same train thirty miles per hour, the cost per mile for the train having a speed of twenty miles per hour may be approximately estimated at one-half the cost of a train having a speed of thirty miles an hour. This of course embraces not only the engines, but the cars, coaches and track, all of which suffer increased wear and damage from increased speed."*

American engineers are not alone in the statement they make that cost of operation increases with the square of the velocity. In Europe, where great attention has been given this subject, the same basis is accepted, and speed occupies an important relation to the rate charged. "Foreign railway companies recognize that speed

* "Railway Property," page 155.

is the essence of expense, by making lower rates for passengers and freights carried by slow trains. The estimate of experts is, that expenses increase as the square of velocity; but the ratio is even greater; that is, if the speed of the engine is doubled, the cost of the wear and tear of the road is more than quadrupled."*

If cost increases approximately with the square of the velocity, expenses incident to the maintenance of the roadbed and track must be divided upon that basis. Under the train mile theory cost is made to appear the same.

In order to apportion expenses as between passenger and freight all the diversities of cost peculiar to different properties must also be ascertained and considered; quality of the track and machinery especially. It is manifest that the cost of moving a vehicle on a good track cannot be the same as the cost of moving it over a less perfect track.

In conclusion, as it is apparent that weight and speed are prime elements, any method of division of cost must take these into account. Thus, a graduated scale must be provided for each class of vehicles at different rates of speed. This scale must give the cost per mile, commencing, say, with trains of a certain class, weighing eight hundred thousand pounds, and traveling at the rate of fifty miles an hour, down to trains of corresponding grade moving at the rate of ten miles an hour. The expense must be determined

* Memorial of President Albert Keep.

for each through all the different aggregations of weight and speed. In other words, as many schedules of division must be prepared as there are different kinds of trains.

Any attempt to separate expenses must be based upon the performance of each locomotive and car. Each must be followed wherever it goes and cost apportioned to the traffic it handles on the basis of gross weight and speed attained. And in basing cost upon speed, specific rates must be figured separately, as stated above. Averages will not suffice. And it must not be forgotten that all the different rates of speed at which trains are moved are likely to be attained by a vehicle traveling under ordinary usage over ten miles of continuous road. For these and other reasons not necessary to recite, a division of passenger and freight expenses on the basis of individual performance of locomotives and cars is clearly impossible from the clerical labor it would involve.

While individual performance of cars would be a trustworthy basis for dividing expense of maintenance of track and equipment, it would not be a proper basis for dividing other expenses incident to the operation of a property common to freight and passenger traffic. The relative proportion of such expenses is never the same from day to day on any particular road. Nothing could be more variable. We cannot enumerate the expenses in detail. They embrace such items as deterioration from natural causes, disbursements for fuel and other supplies used in

common by locomotives, cost of repairing and renewing buildings used in common, cost of supplies used at stations and shops, wages and expenses of employes about stations occupied with both kinds of business.

Expenses common to passenger and freight traffic also include the taxes of railways, expenses of organization, disbursements for lawyers, court expenses, damages of a general character, payments for rents, stationery, advertising, foreign agencies (where the object is general) and the salaries of the principal officers, including their assistants. There is no basis for determining the relation these expenses severally bear to passenger and freight, or if you should find such a basis for the moment for one road it would not apply to other roads or continuously for any particular property. We may regret these insurmountable obstacles, but we cannot ignore them.*

* "Everyone will admit that if the cost of freight and passenger service could be obtained with substantial correctness, the information would be valuable; and it would certainly be quite as valuable for the roads as it would be for railway commissions or other governmental agencies. But I have not yet arrived at the point of being able to see how a body of irrelevant statistics which are supposed to support another body of erroneous deductions can be of practical value to any legislative or executive branch of government, any more than they would be valuable to the companies themselves. It is said a uniform basis must be adopted and maintained to secure the benefit of comparisons; but it is difficult to understand how, if one error is vicious and harmful, an accumulation of errors may become salutary; and it is quite as difficult to see how true statistical instruction may be derived by comparing a large number of errors more or less gross with each other. . . . So far, therefore,

The question of dividing expenses as between passengers and freight has long occupied the attention of railway students and experts, as well as government officials. Among the former is the late G. L. Lansing. In an able paper upon the subject prepared by him and published in 1889, he said: "Any attempt to make a division of expenses between passengers and freight must for the greater part be based on mere assumption. But few items of the expenses are capable of such a division, most of the charges being incurred for the operation of the line as a whole without regard to the several classes of traffic. By examining the sub-headings under which operating expenses are classified the following are wholly or partially incapable of division between passenger and freight service, except on some arbitrary basis. This will be recognized on reading the items. Under the heading of maintenance of way and structures we have: Repairs of roadway; renewal of rails, renewal of ties; repairs of bridges and culverts; repairs of fences, road crossings, signs and cattle guards; repairs of buildings; repairs of docks and wharves;

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from the statistics obtained from this division being valuable as affording a criterion for railway rates, I believe that the very fact that this false information is liable to be so used is the most cogent reason which could be given for ceasing to furnish a basis confessedly erroneous. A man who travels in the wrong direction is certainly as likely never to arrive at his destination as one who travels not at all."—*Extract from letter of Isaac N. Phillips, Chairman, Illinois Railroad and Warehouse Commission, to Committee of Railroad Commissioners, April 9th, 1892.*

repairs of telegraph; repairs of locomotives (including those in mixed trains); repairs of passenger cars (which include baggage, mail, milk and pay cars); repairs of freight cars (which include pile drivers, excavators and wrecking cars); repairs of ferry boats (freight and passenger), tugs, floats and barges; shop machinery, tools, etc.; other expenses (of equipment, way and structures). Under the head of transportation there are: Wages of enginemen, firemen and roundhouse men (including mixed trains); fuel for locomotives (including mixed trains); water supply for locomotives; other supplies for locomotives; wages of other trainmen; other train supplies; wages of switchmen, flagmen and watchmen; expense of telegraph, including train dispatchers and operators; wages of station agents (joint passenger and freight), clerks and laborers; station supplies; switching charges (including rental of yards and tracks at junction points; mileage balances (cars and engines, including baggage, mail and express cars and engines hauling mixed trains); loss and damage (including property and materials of company burned); injuries to persons; expenses of barges, floats, tugs and ferry boats; salaries of officers; salaries of general office clerks; general office rental and expenses; general commercial agencies; advertising; insurance (buildings, etc.); expenses of traffic associations; rents, buildings, tracks, yards and terminals; legal expenses; stationery and printing; other general expenses."

Such briefly, are some of the more important obstacles that prevent anything like a trustworthy apportionment of the expenses of a railroad as between its passenger and freight business.

CHAPTER XXII.

PROFIT AND LOSS OR INCOME ACCOUNT.

This exhibit embraces, on one side the company's current receipts, and on the other side its operating expenses, taxes and fixed charges. It shows, also, any amount there may be available for dividends, or the deficit, if there is a deficit. The balance of cash in the treasury of a company cuts no figure. The purpose of this statement is to show the result of operations. It is quite possible that a portion of the earnings exists in the shape of balances due from patrons and connecting lines. This fact, however, is not material, as the amount has been earned. In the same way, all accrued operating expenses and taxes are included, whether paid or not.

The practice among many American railroads, of utilizing a part of their earnings for improving and bettering their properties, cuts no figure in determining results. The amount applicable for dividends is properly the net after paying operating expenses, taxes and interest. If any of this surplus has been diverted for purposes of improvement, it is purely a question of policy as to its final disposition and, therefore, one that cannot be judged in advance or covered by any formula.*

* It is the practice of many well-managed American roads to charge all or a certain portion of their yearly disbursements for construction purposes to Income Account.

The Credits to Income, or profit and loss, are embraced under the following heads and include the things specified in connection with each:

Passenger Earnings.—This account includes the gross receipts from passengers, whether carried on passenger or freight trains; amounts received for hauling cars in passenger trains; receipts for accommodations in parlor and other cars; charges for transporting corpses when ticketed the same as passengers.

Freight Earnings.—This account includes the receipts for transportation of freight (not otherwise provided for), whether carried in freight or passenger trains. It also embraces charges for transportation of milk, earnings (save from passengers) derived from transportation of property of circuses and similar shows; also amounts received for hauling cars in freight trains.*

*NOTE.—Passenger and freight receipts made up as above represent the total credits. The sums that must be deducted in order to show the earnings proper are given below. They are required to be entered separately on the books; accounts will accordingly be opened with each. They are as follows, viz.:

Tickets Redeemed.—This account should be charged with amounts paid for the redemption of tickets, also all fares refunded. The amount thus charged should be deducted from passenger earnings.

Excess Fares Refunded.—This account includes the amount of excess fares (overcharges) refunded; the amount thus charged will be deducted from passenger earnings.

Overcharges to Shippers.—This amount is to be deducted from freight earnings. It includes amounts paid to shippers for overcharges on freight caused by errors in rates, waybilling, accounting, etc. It also includes amounts due to other companies for overcharges paid by them to shippers for account of the debtor company. Amounts collected from other

Express Earnings.—This account includes amounts charged for transportation of express matter.

Mail Earnings.—This account includes amounts charged the government for the transportation of mails and messengers, and for facilities rendered in connection therewith.

Miscellaneous Earnings.—This account includes extra baggage charges, amounts for transportation of parcels and animals in baggage cars; credit balances for mileage of cars; credit balances for switching and transferring cars; amounts charged for rent of tracks, buildings, lands, yards and terminals (when same are directly connected with the operation of the road); amounts charged for storage, car service, loading and unloading, cooperage, weighing, charges against news agents, and other sources connected with the operation of a road not otherwise provided for.*

Interest on Bonds Owned by the Company.—This account includes interest on bonds owned by the company, whether same are held in its treasury or in trust for it by a trustee.

When, however, bonds are deposited with a trustee in lieu of other bonds issued, they are in the nature of a set-off. In such case, the amount received as interest on the bonds deposited is

companies for overcharges, also all undercharges collected, will be credited to this heading; the account will thus represent the net amount of overcharges to shippers.

* Care must be taken not to confound these items with those included in "Miscellaneous Income."

credited to the account to which the interest on the outstanding bonds is charged.

Dividends on Stock Owned by the Company.—This account includes dividends or interest on stocks owned by the company, whether same are held in its treasury or in trust for it by a trustee.

Miscellaneous Income.—This account includes interest on notes and loans; premiums on notes or current accounts sold; balance of receipts over payments for exchange, rent of buildings and lands not connected in any way with the operation of the road; other collections from sources not connected directly with the operation of the road, not otherwise provided for herein.*

The Debits to Income, or profit and loss account, are embraced under the following heads and include the things specified in connection with each:

Operating Expenses.—The operating expenses include cost of working the property and maintaining the same. They embrace the wages of men engaged in conducting the business, including the cost of repairs and renewals and all expenses incident to operating and maintaining.

Taxes.—This account includes taxes on real estate, right of way, buildings, equipment, and other property, real or personal; also, taxes on capital stock, earnings, dividends or interest, and for other purposes.

*Care must be taken not to confound the items coming under this head with those included in "Miscellaneous Earnings."

Interest on Bonds.—This account includes the interest on the funded debt of a company; also, premiums paid on gold or currency, or for any other purpose rendered necessary to satisfy the obligations on this account.*

Interest on Floating Debt, Discount and Exchange.—This account includes interest on the floating debt, and discount suffered in sale of current paper or disposal of kindred accounts; also balance of amounts paid for exchange on drafts, checks, notes, bills of exchange, etc., not otherwise provided for.

Rentals.—This account includes amount of rentals for leased lines, bridges, ferries, steamboats, rolling stock, and other purposes not included in operating expenses.†

Dividends on stock.—This account includes dividends on capital stock or evidences of the latter, or substitutes therefor.

Other accounts than those mentioned in the foregoing may be opened as occasion requires to cover receipts or disbursements of an extraordinary nature which may arise in the operation of railroads, and which it is desirable for any purpose to show apart. The foregoing, however,

* In those instances where it is necessary to buy exchange to pay interest, as in the case of an American road having its interest payable, say, in Amsterdam, the cost of the exchange should be charged to "Interest on Bonds."

† Rents of tracks, buildings, yards and terminals are charged as an operating expense, as they appear, under the head of "Outside Agencies," "Rents for Tracks, Yards and Terminals" or "Rents of Buildings and Other Property."

constitute generally all the headings that appear in the profit and loss account.

As will be seen from the foregoing, profit and loss is credited with earnings, less certain petty items in the nature of refunds, drawbacks and overcharges; it is charged with operating expenses, taxes, interest and rentals.

If receipts exceed expenditures the difference represents net income; if they fall short, it represents a deficit.

Dividends are properly payable out of net income.

The income account, it will thus be seen, embraces every current receipt and expenditure incident to the operation and maintenance of the property.

A study of the Income Account shows that everything is finally summed up in this statement. If a dollar is lost, stolen or frittered away it lessens the balance carried to the credit of owners (that is, the surplus) just so much. If earnings are honestly collected and expenditures carefully scrutinized, the income account should exhibit the full capacities of a property; otherwise not.

CHAPTER XXIII.

THE GENERAL BALANCE SHEET.

The general balance sheet of a company sums up all its affairs and summarizes its accounts. It is a résumé of its operations up to date.

A great desideratum in this balance sheet is to arrange and condense the information so that the reader may comprehend at a glance the things it is essential he should.

It should embrace only such information as is of interest to owners and managers, and those who seek investments in the property.

It should be remembered in compiling such a statement as this that too nice particularization of facts tends to befog rather than enlighten.

In this exhibit only the aggregates of the different classes of accounts should be embodied. The details necessary to the elucidation of these accounts can be rendered apart.

A general balance sheet should exhibit on the debtor side the cost of the property; also, its assets, including supplies. On the other side of the statement should be shown the amount of the capital stock, classified, particulars of funded debt, and liabilities of various kinds. Further than this it should not go.

For the purpose of comparison, the general balance sheet should embrace the balances at the

time the last statement was made, particularizing the changes that each account has undergone.*

I append below, for the benefit of those curious in such matters, the more important accounts of a railway company that appear on the general balance sheet. It is a summary of the general ledger. The accounts appear in the following order:

ASSETS.

Cost of Property.—Including equipment.

Sinking Funds and Trust Accounts.—This includes funds held by trustees for special purposes, such as sinking funds, redemption of bonds, etc.

General Assets.—This includes investments in stocks and bonds owned by a company, and other investments, not included under "Current Assets," under the control of the company's officers.

Current Assets.—This includes value of material and fuel on hand; amounts due from agents and conductors; from individuals and corporations; from the general government; bills receivable; other current assets; cash.

LIABILITIES.

Capital Stock.—Common stock, preferred stock, etc.

Funded Debt.—This includes the mortgage or funded debt, each class of bonds and the amount thereof being specified.

* The following form is suggested:

NAME OF THE ACCOUNT.	Balance to Debit at the commencement of the month.	Balance to Debit at the close of the month.	Amount each balance has *increased* since the last statement.	Amount each balance has *decreased* since the last statement.

This is for the debit side of the balance sheet. The credit side is similar. If the balance sheet is for a year or part of a year instead of a month, the fact will be stated.

Sinking Funds and Trust Accounts.—This includes sinking fund installments paid, accretions to sinking funds, and other trust liabilities.

Current Liabilities.—This includes accounts payable, pay rolls unpaid, bills payable, due individuals and corporations, past due and accruing interest on bonds, unpaid dividends, rental, other current liabilities.

Income Account.—However, if the income account represents a loss instead of a profit, then this balance would appear on the debit side of the balance sheet.

BOOK II.

THE ACT OF PAYING RAILWAY EMPLOYES THEIR WAGES

AND

THINGS GERMANE THERETO.

CHAPTER I.

THINGS OF A GENERAL AND SPECIAL NATURE.

The administrative affairs of railroads have had little interest for the public or the mass of railroad men. Because of this, great changes that have occurred in their methods have remained unnoticed. They have, however, been none the less real. Railway men particularly are more often interested in these changes than they suppose. Methods and practices connected with the payment of wages of railway men (the subject of this book) may be cited as an instance.

The inception and growth of great enterprises are always attended with administrative crudities. Railways are no exception. In the government of corporations, public and private, correct methods prevail wherever order and responsibility are intelligently sought.

The incidental and highly beneficial purposes that the act of paying wages may be made to serve are neither generally known nor appreciated. The mechanical act only is thought of, while the effect is overlooked. The subject is not one of general interest, but forms an important link in the chain of railway administration and as such is entitled to careful consideration.

In reference to the manner of paying, it would at first glance seem as if payment by check or draft to be cashed at a central office or designated agency would be a decided advance over the method of paying each man in person in currency. We are accustomed to associate safety with the use of the bank check. It is a thing payable to a specific person and apparently no one else can use it. In ascribing to it this virtue, however, we forget that wherever there is a dishonest man, a check in his hands is no more secure than a bag of gold, if he possesses avenues through which he may dispose of it. But experts in such matters will reply that if forgery is committed, if improper use is made of a check, that the bank honoring it is responsible and not the maker. This is true to the extent that forgery can be proven. But how can it be proven in the case of large bodies of men? To be sure, if the wages due to a particular person are not received by him, he will complain, and thus the theft of his check and its improper use will be discovered. This is simple enough, and so far the check system serves the purpose. But suppose the roll contains fictitous names. Suppose that the person in whose name the check is drawn has no existence save in the brain of the timekeeper or the person making the roll? An indorsement on the back of such a document is not a forgery, and neither the bank nor the agent cashing it can be held responsible. A person obtaining money on it is undoubtedly responsi-

ble and may be punished if he can be detected, but his detection requires a personal surveillance that is practically impossible. The maker of a fictitious check is, moreover, culpable in issuing such paper and thereby lessens the scope of redress. Thus, the inviolableness of the check system is destroyed and instead of being a source of strength it may become an element of weakness.

The use of checks in paying railway employes affords no reliable guaranty of honest practice. It is as necessary to secure the identification of the payee where they are used as where simpler forms of payment are practiced. This is not generally understood.

It was at one time the universal custom to pay wages in currency; to hand to each man the amount due him. In many manufactories the amount was placed in an envelope in advance, so as to secure celerity.

Transportation companies paid in currency through a paymaster, counting out the amount due each man as he appeared in person to claim his wages. This is the primitive way and is still largely followed. The practice of paying by check has, however, more advocates to-day than the old system, it is probable, especially where there are adequate banking facilities.

Everyone knows that risk attends the handling of currency; the less that is known, the more mysterious and terrible it appears, and as the great body have no practical knowledge of such matters

they evince their conservatism by advocating the adoption of that which seems to be best. Nevertheless, the use of checks in payment of large forces of men is fraught with great danger unless due formalities are observed; and where this is done, the cost of the check system and the inconvenience attending its operation is sufficient, when known, other things being equal, to discourage its adoption. The change from the old way of paying to the new method was the result largely of timidity. In some cases it arose from a desire, born of necessity, to retain control of the money longer than was possible under the old way. But whatever the occasion, whether real or otherwise, it was made in good faith. It seemed to be, all things considered, best. If the basis upon which the change was made was not always what it was thought, the error was sincere. However, in order that we may understand the question more particularly than a superficial glance at it renders possible, let us take up the subject in some detail.

The first effect we notice that attends the payment of railroad employes by check is the disturbance it creates in exchanges, causing a plethora of currency here and a scarcity there, and as railroads increase in length and importance the disturbance increases proportionately. It does not alter conditions that these disturbances are generally unsuspected by those they affect. The interests of railroads, like those of governments, are advanced or retarded just as the

material interests of the people tributary to them are advanced or retarded; they are therefore bound always to consider them and if possible advance them whether the beneficiary is conscious of it or not.

The disturbance in exchanges is not brought about directly by the discontinuance of the payment of wages in currency, but indirectly. The daily receipts of a railroad are gathered by its agents along its lines and outlying dependencies and transmitted to some central depot for safe keeping and use. The practice, if no counter influence prevailed, would quickly drain the country districts of a large part of their circulating medium. One of the counteracting influences has been the currency disbursed in the shape of wages along the line. In this way a large portion of the money collected is returned from whence it came and all hardship and inconvenience happily averted. The contraction referred to can, however, it may be answered, be counteracted in other ways than by the distribution of wages. It may be brought about by establishing agencies of deposit for the funds of a company along its line, the amount of these deposits being utilized in the payment of the company's checks for wages. One objection to this plan is its incompleteness. The number of these deposits must necessarily be restricted, and to the extent that this is so they fall short of accomplishing the desired object. Another objection to this plan is the risk that attends the opening of accounts with banks and agencies

located where the depositor cannot have personal cognizance of their financial condition from day to day. This risk, supplementing the danger that attends the transfer of such deposits, is a danger to be considered quite as real as the risk that attends the payment of wages in currency.

Another and a feasible way for retaining the currency in the town where it is collected is to arrange with a local bank, if there is a good one, to exchange the daily receipts of the station for a draft on some bank located in the city where the main account of the company is kept. In this way the currency is kept in the town where it is collected, and the risk that attends remittances, from the standpoint of the agent, is much simplified. This plan, however, involves the necessity of the company keeping itself advised as to the reliability of the banks thus trusted. Its security may, however, be strengthened in the majority of cases by a bond, and the local banks along the line of a railroad are, as a rule, very glad to give such security in order to obtain the currency collected at the stations.

In estimating the currency gathered up by railroad companies we must remember that the gross earnings of these properties do not represent the full amount. Carriage of passengers and freight involves collateral collections, and in many cases the amount of cash that a company handles is double the amount of its earnings. It is necessary that this money should be forwarded to the headquarters of a company, but while this

concentration is unavoidable, it is equally true that the carrier must acknowledge his obligations to offset the inconveniences his necessities impose on his patrons so far as he can.

It must not be forgotten, however, that depletion of the currency of a country does not affect it alike at all times. When money is required to move the crops or for other purposes of an unusual nature, any stringency is especially marked. It will be felt at all times, however, because of its artificial nature. The payment of employes in currency at the place where they work counteracts this very largely.

If to the practice of paying wages in currency we supplement the custom of paying in a similar way the small bills that accrue along the line of a road (that it is possible for agents to pay without inconvenience from their daily receipts), we still more fully counteract the contraction referred to.

It is claimed by advocates of the check system that the payment of checks out of the current receipts of station agents, and their transmission in lieu of currency, effects the same object that the payment of wages in currency does. This is true so far as it is carried out. Unfortunately, however, all the checks reach the stations at about the same time and in such numbers and for such amounts that only a very small fraction can be honored by agents. If the holders of checks would wait until the receipts of the station permitted payment everybody could be

accommodated, and the difficulty would be overcome. But needs of holders of checks will not permit this. They cannot wait a moment. And when they learn that the agent cannot honor their paper upon demand, they hasten at once to the nearest place where they can dispose of it. The bulk of the checks paid city employes by a great railroad company are said by it to be cashed by saloons.

Only a small portion of the checks issued can be honored by agents, and to the extent that this is so to that extent they displace the currency of the country and affect unfavorably its financial interests. Thus, it will be seen that a merely clerical device adopted to meet, in many cases, an imaginary necessity, possesses all the force of a great economic question.

Aside from this phase of the subject, payment by check involves more or less inconvenience and expense to the employe, no matter how numerous the banks may be or how wealthy the district. More or less formality must be observed by him under the most favorable circumstances before he can get his money, and if the ability of his friends to aid him is at all stinted this formality may be supplemented by positive loss.

It is a favorite theory that checks such as we refer to are especially valuable to merchants as affording a convenient medium of exchange. In many cases this may be true, but as a rule they will not receive them save from customers, except at the usual rates of discount. If, therefore,

an employe has no dealings with merchants, the means of disposing of his check in that way without cost is denied. This fact explains the interposition of the saloonkeeper, referred to above.

In a section of country where banks and stores are neither plentiful nor opulent, employes must travel long distances, varying from five miles to two hundred miles, to dispose of their checks. This may seem like an exaggeration. It is, however, true. But whether the distance be ten miles or ten hundred is not pertinent. The principle is the same, and it is undoubtedly true that there are but few railroads where employes would not, in many cases, be compelled to travel a considerable distance for their money. If the time thus occupied is paid for by the company it is a drain on its resources, and not the less so because it does not appear in the accounts, but is hidden under the head of some legitimate expense. If the cost of disposing of his check is borne by the employe, it is a hardship scarcely justified by necessity, unless the financial condition of the company requires it, and even in the latter case it would be better to defer the day of payment rather than attempt to retain the use of the money, by so inconvenient an expedient.

The more we study the practice of paying by check, the more apparent it is that its justification must be found in the risk attending the use of currency. How great this risk is cannot, of course, be determined in advance. It depends

somewhat, however, upon the character of the official having the matter in charge. If he is inexperienced or impotent, danger will attend the practice, as it does everything such persons are connected with or about which they have any discretion. The experience of some of the greatest and best managed railroads indicates that the risk is merely nominal. It was my duty to attend to matters of this kind at one time. The disbursements extended over a period of twenty-five years and were in the neighborhood of three hundred millions of dollars. Something of the exemption from loss that attended the work was due to the care of paymasters, but even should the practice have been attended by the loss of a few hundred dollars, more or less, the margin would still have been largely in favor of the plan of paying with currency. The gratification employes feel in receiving their pay in currency or gold will always largely offset losses. Men who are not versed in financial affairs, or who, like the great bulk of railway men, do not keep a bank account, do not like the check system. The more nearly the money paid them conforms to the uses to which they desire to put it, the better they are pleased. This fact is an unanswerable argument in behalf of currency, whenever it is practicable to pay in that way.

In the early history of railroads, as of all corporations, the convenience of the employe in matters of this kind was very little thought of. But now wherever the practices of an employer

do not conform (in immaterial matters) to the reasonable convenience and just expectation of his servants, they are changed so far as it is possible to do so without material injury. This is right, and disregard of the principle upon which it is based will work mischief wherever indulged in.

In the conduct of business there are many peculiar and subtle things not known or suspected by those who have no practical knowledge of the vicissitudes of such affairs. One of these, connected with railroads, is the sums apparently due to employes that are never called for. The amount varies upon different roads, but is not far from one-twelfth of one per cent. of the gross wages entered on the pay roll. Why this amount is not called for is largely a matter of surmise. More or less of it probably is made up of duplicate credits; a portion by the insertion of the names of employes on the roll after they have left the service; a portion is made up of sums not claimed by the payee because of the smallness of the amount or the trouble of collecting. While it is impossible to determine exactly how the surplus occurs, we know that it exists; that for every million of dollars of wages entered on a roll there will be at least one thousand dollars that will never be called for. But whether this sum will remain in the exchequer of the company or not depends largely upon the method of paying. If the company employs a paymaster and requires all who have anything due them to appear before him and

claim their wages, no demand will ever be made for sums entered inadvertently. Such amounts will, therefore, be saved. If, on the other hand, checks are drawn for every name on the roll and industrious search is made for claimants, real or fictitious, parties will be found to represent them. Thus, a company will not only lose this sum, but will demoralize its service through the opening for unfair advantage it suggests. Payment of wages by check does not involve the loss of money in this way, provided the checks are distributed by a paymaster personally to the men. Under such circumstances, checks for fictitious wages would remain uncalled for the same as currency. But if, in order to save the expenses of a pay car, the practice is adopted of distributing checks through parties lacking discretion or experience or interest, checks issued for fictitious wages will be distributed with others.

When checks are used, currency should be sent to pay the roll where it is apparent that employes are unable to dispose of their paper without hardship or loss of time. In the absence of a paymaster such amounts must be forwarded to some person for distribution. Thus a risk is created. This added risk does not arise wholly from danger that the money will be stolen, but partly from the inducement it holds out to the dishonestly inclined to insert fictitious amounts on the roll for the purpose of appropriating them afterward. These and kindred risks are so well known to practical men that it hardly seems necessary to

state them. But, as matters of this nature are frequently made the subject of action by those not possessing personal knowledge of the subject, it is proper to refer to them.*

In the operations of corporations like railroads and governments, while every employe is presumably honest, the practice of accounting requires that every transaction shall have the concurrent knowledge and approval of two or more co-ordinate departments. The auditing of an account and its payment are never properly to be intrusted to the same hand. If it is, an improper use of power is to be expected sooner or later. The record of defalcations in the life of corporate institutions shows that a certain number (albeit the percentage is small) takes advantage of opportunity to defraud the employer. The experience of every kind of business is the same. Wherever men are called upon to handle money, a certain proportion seeks unfair advantage. And if the payment of the forces of corporations is distributed among a number of people (no matter whether the number is great or small), a certain proportion will seek to derive personal and unfair benefit therefrom. The more we increase the number the more we increase the risk. The losses that occur may, indeed, be

* Not only is this true in regard to the particular case in question, but it applies to many of the abuses or mistakes of judgment that occur in connection with the payment of railway employes. These defects are not generally known by railway managers, and as no great outcry is made against them they become permanent evils.

so subtle as to escape detection, but they will occur nevertheless. Wherever opportunity is afforded advantage will be taken. This advantage will arise through the insertion of fictitious names and exaggerated amounts on the rolls when those who audit accounts or hire or discharge men also attend to the payment thereof. The very act of paying suggests the advantage that may be taken, and that this will be used we can no more doubt than we can doubt that the world contains a certain number of rogues.

A company, therefore, that multiplies its paymasters incurs a risk equal to the percentage that unstable people bear to those who are stable; if the percentage is great, the loss will be great; if small, the loss will be small. But whether large or small the amount purloined will always be a matter of conjecture for the reason that the facts can never be known.

The practice of intrusting the payment of the forces of railroads to the heads of departments is objectionable because of the risk. In such cases the chief cannot himself perform the labor, and his responsibility, therefore, will be at best merely nominal. He will be compelled to intrust the duty to some one else, and thus, while having apparently the stability that attaches to the action of a high official, real responsibility will rest upon a person, in many cases, lacking in the experience and sagacity necessary in an office of this nature. It is a theory (where this method of paying is advocated) that it affords the superin-

tendent an opportunity of coming in frequent contact with the force under him, thus improving the service besides saving the expense of a paymaster. But is the expense made any the less by not calling the person a paymaster? Whoever does the work must be paid, and if it is performed by an awkward or unskilled person, the cost is increased, not diminished. It cannot be possible for the chief himself to perform the service; the duty is merely clerical. He has current duties to fulfill connected with the operating of the road. He must, therefore, employ someone to do it for him. And thus not only does the company not save anything but, as a matter of fact, increases the expense besides multiplying indefinitely the risk.

Exactly how a force should be paid, whether from a pay car, from the office of a superintendent, the window of a caboose, or the cabin of a flagman, does not matter, but it is a matter of the utmost importance who performs the labor. It is important that it should be carried on under the supervision of an independent officer—an officer not in any way responsible for the wages of the men or their employment or the certification of the pay roll. This person is properly the financial officer. The medium through which he acts is the paymaster. The mechanical appliances are not important, though it is not unreasonable to suppose that a duty so fraught with risks and responsibilities should be surrounded with carefully considered formalities and safeguards; but these are matters about which people

will differ, and it is not of vital consequence compared with the assertion of the general principle of accounting, that the official who audits an account shall not himself pay it. The former's duty terminates when he certifies for payment. The province of the paymaster is not alone to count out the money; it is to ascertain that the claim is a *bona fide* one and should, to the best of his knowledge and belief, be paid. This imperative principle in accounting precludes the idea that the official who certifies to a pay roll shall himself pay it; forbids that an official who employs men and designates the amount due to each shall pay the same. Every correct principle of business requires that the latter service shall be performed by a co-ordinate official in no way responsible for the debt, in order that co-ordinate knowledge may be had of the existence of the men. If this principle is true, and it is, it excludes the person who employs labor from acting as a paymaster; it also excludes all agents who act under him or are responsible to him.

Wherever the practice of paying by check is adhered to, every possible care should be observed to enable holders of checks to dispose of their paper with as little inconvenience as possible. In such cases each employe should be notified over and over again that he is not expected to pay a premium to get his check cashed. So far as it lies in the power of the railway company to protect its employes from loss, it should be done. But is it possible always to prevent loss? No.

While many holders of checks will be able to get their paper cashed without loss, contrary cases will occur. Many will suffer loss rather than subject themselves to the inconvenience and delay that its avoidance engenders. It is not probable that anyone will complain. But this proves nothing. It is never a justification of wrong that its victims acquiesce without protest. The practices of corporations in matters of this kind rarely elicit complaint. That does not prove that they are satisfactory. An autocrat is never conscious of the friction that attends his methods. So far as he sees or hears they are perfect. His subjects, if wise, are chary about expressing discontent. They swallow their grievances. It is the safest way, and what is secretly, perhaps, an inconvenience and an annoyance, quite likely they openly commend.

Railway officers are severe or mild autocrats according to their intelligence, conscience and experience, and the supervision exercised over them by owners. In order to properly preserve his rights, the owner requires that each officer shall act with others of equal or independent rank. This safeguard he throws around his property not only to protect it, but to protect those who work for him and to maintain their loyalty to him. Where there is no co-ordinate department to enforce a safeguard, the responsibility of the officer to the employer is merely nominal. To the great body of railroad men an officer is an autocrat pure and simple, and no matter how

arbitrary his orders, they are acquiesced in. So extreme is this that if he were to issue directions that wages were to be paid in ninety days paper instead of currency, the force would go forward believing that his decision was necessary and for the best. Such is their loyalty to their employer, such their belief in the authority of his agents. It is this spirit that renders the management of great corporations possible, and managers who are wise are careful not to do anything to destroy or lessen its efficacy.

Aside from the inconvenience which payment by check involves, no essential safeguards are necessarily lost sight of in adopting this method of payment, provided the checks are distributed under the supervision of the disbursing officer. The latter is important and cannot be waived any more under the check system than when currency is used. The mere fact of requiring each person on the roll to present himself before the paymaster or someone delegated by him, while it may not wholly prevent the insertion of fictitious names, renders it extremely difficult and prevents any extended practice of this kind. Not only is there likelihood that the paymaster or his agent will discover the fraud, but there is the constant and pressing danger that it will be discovered and exposed by those with whom the supposed employe claims to have worked. This latter safeguard a company may possess by requiring groups of employes working together to present themselves for their pay in a body.

Where large bodies of men are employed security is only to be attained by requiring each man to appear personally and claim his wages. This precludes the use of orders drawn on the company for wages, presented by a second party. Documents of this kind should only be permitted when the circumstances of the case are imperative and their genuineness indisputable. An instance occurred under my observation many years ago where a railway company was defrauded of a large amount (supposed to be in the neighborhood of fifty thousand dollars) through the countenance its paymaster gave to the practice of giving orders for wages. The custom of recognizing and honoring such orders permitted the insertion of fictitious names upon the roll, the timekeeper and his confederates presenting the orders and collecting the amounts. The excuse was that the men were unavoidably absent. The master mechanic (now dead) who approved the rolls knew only a portion of his men, and did not, therefore, detect the fraudulent entries. These frauds naturally cast distrust upon the practice of giving orders. It was the occurrence of these frauds that suggested the practice of requiring the foreman of each gang of men to certify to the correctness of the pay roll for the force under him. Where this rule is observed, no fictitious name can be inserted, except through collusion, as he knows personally each man and the rate of wages paid. The certificate of a foreman is more valuable than the certificate of his

superior, for the reason that while the foreman knows each man, the latter very likely knows only his foreman. In the approval of the pay roll not only should the foreman certify for his gang, but each official should, in his turn, also certify to the accuracy of the account so far as he is able. Many of these officials, to be sure, will know very little personally about the details of the rolls, but the concurrence of authority that will thus be obtained will be valuable, not only in preventing irregularities, but in the knowledge of the service that the officials will thus acquire. If precautions of this nature are taken in making a roll, and each person named therein is required to present himself for his pay before an alert observer, there is little danger of the insertion of fictitious names. It is the last named danger, as already pointed out, that renders the practice of forwarding wages to be distributed by inattentive agents objectionable. While the instructions given such agents may require that they should passively await the appearance of claimants, and not anticipate payments by undue publicity, the impolicy of clearly stating the reasons for this reticence will, in many cases, render them inoperative.

Aside from the restraint exercised by the paymaster he performs other duties equally necessary, though not of the same value. As the official representative of the company, he is called upon continually to answer the questions of men in regard to their wages, to look into their

complaints and to satisfy them of the justice and equity of the company's intention in all matters regarding their pay. The office of paymaster must be discharged by some one, and while the superintendent would, perhaps, be well qualified to fulfill its duties (if the equities of the service permitted this concentration of responsibility) his subordinate might not. The paymaster is a necessary and integral part of every great force, not only because of certain mechanical and clerical duties necessary to be performed, but as the immediate representative of a necessarily independent and co-ordinate department. He serves the purpose of a wholesome check not attainable in any other way. That the restraint he exercises is rather passive than active increases rather than weakens its character. He performs the duty of an auditor without knowing it, and in the performance of this duty enforces safeguards necessary to the good of the service and the well being of every property.

It is probable that I have, without meaning to, aggravated, in many cases, the hardships that the practice of paying by checks entails. But there can be no question among dispassionate men as to the desirability of having the roll paid by an independent officer. It is possible, nay certain, that the risk attending the handling of currency because of the lawlessness of a country, may render it advisable to use checks in lieu of currency. Where this is the case a paymaster should still be employed.

The practices of railroads are as diverse in respect to their method of paying by check as in other things. In some cases checks are made payable to bearer.* In others they are payable to bearer after being indorsed by the paymaster.† Upon some roads checks are drawn to the order of the payee.‡ In some cases checks are sent to superintendents to be distributed; in others they are forwarded to station agents and local officials on the line; in others they are distributed by a paymaster.

When pay checks are not distributed personally by the paymaster, he should exercise great circumspection as to whom he sends them for distribution. His discretion in this matter should be absolute. For reasons already pointed out, and others that will suggest themselves, it will be well not to distribute the checks continually through the same channel. Thus the checks for a station force may be sent one month to the agent, another month to the cashier, another month to the superintendent, and so on. Or they may be mailed directly to the employe. It will be well, in some cases, to send a special agent to distribute the checks. If precautions of this kind are observed it will be impossible for a fictitious name to creep into the roll without great probability of being detected.

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*See Form 25, Appendix B.

†Where the last named practice is observed the checks are usually distributed from a pay car by the paymaster, the check being indorsed at the time it is delivered.

‡See Form 24, Appendix B.

The plan of drawing checks to the order of the payee commends itself more readily than the other. It apparently protects the payor, but this is only partially true. It will not, as I have shown, prevent the insertion of fictitious names upon the pay roll, the drawing of checks to the order of such names, and the disposal of them afterward.

The method of making checks payable to bearer after being indorsed by the paymaster, while protecting a company from train robbers, does not, it is apparent, protect it from persons in its employ. But the danger in the latter direction is minimized while the convenience of the employe is consulted as far as it can be where checks are used.

The practice found to work so well in commercial life, of drawing checks to the order of the payee, is difficult of enforcement in the payment of large forces of railway employes, for the reason that the names are often wrongly spelled or inaccurately given on the pay roll. Many employes are foreigners, some of whom do not know how to spell their names in English. Many cannot read or write. Some even give fictitious names. Now a check, drawn to order, must be technically and legally correct, and must be indorsed according to the face of the instrument to secure its payment on presentation. If incorrectly made, the indorsement must correspond, otherwise the check will be thrown out.

When checks are drawn to the order of employes, it is necessary to return more or less of them to the paymaster for correction. This, added to the difficulty employes find in identifying themselves or otherwise procuring the money for their paper, results in more or less dissatisfaction, not less real because not made the subject of petition or open expression of discontent.

However, the fact that great and well managed corporations use checks drawn to order in paying their forces, proves that there is nothing insurmountable in the practice and that they moreover esteem it necessary and proper. That these companies find it necessary to make frequent exceptions to the rules that usually govern checks drawn to order, is also probably true. Those familiar with the subject know that it is impossible to make a perfectly correct record of the names of a large number of constantly changing men of different nationalities and degrees of intelligence and education. While it would be possible in the case of train and station men employed by railroads, it would not be possible in the case of the track force, made up, as it is, of Italians, Poles and kindred nationalities. It is not possible to draw checks to the order of a thousand Italians or Poles with technical correctness. It must, therefore, follow, where checks are used, that more or less latitude shall be left those who pay them. It is possible that the practice of paying by check to the order of the

employe may by patience and care be so regulated as to cause little inconvenience to the employe, but the labor is a difficult one.

CHECKS VS. CURRENCY.

The foregoing are the reflections suggested to me by an examination of the system of paying by check. It is quite likely it has advantages I have overlooked. Its advocates claim that it is less expensive. This, indeed, if true, is of the greatest importance. One mistake, however, that is oftentimes made by advocates of the check system is in overlooking the fact that no matter what the form of paying may be, good business practices require that each employe shall personally appear before the paymaster, or someone representing him, for his wages. They fall into the error of supposing that it is proper to send checks to anyone for distribution. They do not attach sufficient importance to the principle that neither the man who makes a pay roll nor his subordinate (i. e., neither the superintendent nor his agent) should have the handling of wages, no matter whether the method of payment be by currency or check. A check in their hands, it is manifest, is no more inviolable than a piece of gold, because no adequate means exist of detecting its improper use.

It is as necessary to require that a check should be delivered personally to the employe by the paymaster or his agent as it is that currency

should be so delivered. A neglect of this precaution may not only entail loss (as I have been at pains to show), but a service may be greatly demoralized thereby.

If it is necessary to distribute checks in the same manner that currency is paid, we must, in order to determine the cost of the former system, add to the cost of the latter the stationery and clerical work the former entails. This expense is neither slight nor unimportant, and may be supplemented by still other expenses trifling in detail, it is true, but aggregating a considerable sum. If, on the other hand, checks are distributed through the medium of local officials, we must add the cost of such distribution. This involves in each instance the clerical work incident to the inclosure of the checks, the cost of sending the package forward and the delivery of the checks.*

The saving entailed by the distribution of checks through the medium of local officials instead of by a paymaster, will be considerable, but the company pursuing such a plan incurs, as I have shown, more or less risk.

An advantage claimed by those who advocate the distribution of checks through the medium of

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*It is probable that there are not two roads where like practices are carried out. In one case the taking of a receipt will be considered of the utmost importance; in another, the mere witnessing of the payment will be thought to be sufficient. It does not matter what the system is so that it is effective and reasonably economical.

local officials, is the avoidance of the interruption of business that attends the operations of the paymaster. This is hardly tenable, as the distribution of checks through the medium of such officials entails quite as much delay to business as the operations of the pay car, unless, indeed, the company requires that its men shall call for their checks after office hours. This latter practice, however, can hardly be justified as a rule, although it may, indeed, be proper in particular instances. Only extreme urgency can warrant a company in compelling its men to go in search of their wages after working hours. The idea is objectionable. It is not necessary, therefore, in attempting to show the relative cost of different methods of payment, to consider this particular feature. If it were justifiable, there is no reason why the duties of the paymaster should not be performed after office hours; why the pay car should not run at night, and men be required to present themselves at whatever hour it passes, be it early or late.

The practice of paying in currency has its great justification in the universal satisfaction it affords employes. It is simple and complete. The risk, except in particular localities, is slight, and the delay to business unworthy of notice. Whatever the risk may be, it is in a measure offset by the satisfaction it gives and the avoidance of risks in other directions.

In considering the expense of paying a force through the medium of a paymaster, it must be

remembered that it is not essential that the employe should personally receipt for his wages. It is essential, however, nay vital, that he should personally appear. The payment may be witnessed by a clerk, and the binding force of the transaction will be the same as if the receipt of the payee were taken personally. This practice has been followed by great corporations for long series of years (in order to facilitate the rapid discharge of business) without loss, or a question arising that would not have come up in a more aggravating shape under other methods. The practice (where this form is observed) is to have the clerk call the name of the employe and the amount due him; the paymaster observes the claimant, counts and pays him the amount, at the same time repeating the sum to the clerk. If he does not feel sure of the accuracy of the clerk, he examines the roll personally before paying. The great merit of this method is, that it enables the force to be paid as fast as the money can be counted, the delay that would be occasioned by the employe's receipting for his wages being avoided.

In comparing the cost of paying by currency and by check, the minor expenses that the check system entails are generally overlooked. The bare cost of drawing the checks is ascertained, but the incidental expenses are omitted. Hence the mistaken view of the relative cost of the two systems.

A correct performance of the business of paying a force requires, as has been shown, that a

paymaster shall be employed, even in those cases where the check system is used. The reason why this is so I have endeavored to make clear, and if my conclusions are correct, then we must, in order to determine the cost of the check system, add many of the expenses incident to the practice of paying in currency. The savings to be effected in paying, while on the whole, in favor of the check system, will not be great.

In summing up questions in regard to the best manner of paying men it may be said that the value of paying in currency through a paymaster is worth a great deal to a corporation in the satisfaction it affords employes and in the saving of time that would otherwise be lost by employes in getting their checks cashed. The question is, does the value of the system exceed the risk? If it does, then payment by currency should be followed; if it does not, it should be abandoned.

PAYING IN CURRENCY TO THE EMPLOYE IN PERSON.

The employment of a paymaster, is, on many accounts indispensable, no matter what the form of payment may be, whether by check or currency. The *bona fide* character of the names that appear on a pay roll can only be substantiated by the appearance in the flesh of every person named. It does not matter what title the paymaster bears, but it is important that he should not be a subordinate of those who make the pay

rolls or certify to them. One of the most important of his duties is that of an auditor. By compelling everyone whose name appears on the roll to appear in person, he unconsciously audits the accounts of those who make the roll.

In many instances the paymaster is the only officer the employe ever comes in contact with. In such cases he is representative. If kindly and wise, *ergo*, the proprietor and his representatives are kindly and wise; if lacking in graciousness, the organization takes on an unfavorable aspect.

It is important that, while the paymaster should enforce needed rules and regulations, he should also, at all times, pay greater regard to the comfort of employes than to his own convenience or dignity.

His position, while not difficult to fill satisfactorily, is not always a pleasant one; many things will occur to try his patience. One of his chief annoyances is the disposition of men who have wages due them to ask for the same at inopportune seasons. Order and method require that the time of paying should be restricted to certain days, subdivisions of time being carried so far upon many lines as to designate the particular hour (almost minute) when each employe shall present himself for his pay. Nevertheless, no one who presents himself before the paymaster (no matter whether it is his particular hour or not) should be allowed to go away empty handed, if his necessities render his pay important to him. How to determine the extent of this urgency is

one of the perplexities of the paymaster. If he errs, however, it should be on the side of leniency. When men crowd for their money at inopportune seasons it may be generally accepted as evidence of their needs, and as their money is due, and quite likely has been due for days, perhaps weeks, their wants should be considered rather than the convenience of the paymaster or the observance of technical rules. In cases of this kind, the paymaster will show greater wisdom in ignoring a rule than in observing it. He and his employer will gain in popularity thereby, and if he chide the employe for his precipitancy, he should do it with so much gentleness and amiability that the party offending will not feel that he is being rebuffed, but that the company considers his convenience and happiness above mere technicalities.

The same spirit that will lead a paymaster to treat with kindly indulgence a disregard of established rules by those whose necessities compel them to importune him will also lead a company to exercise indulgence toward those whose necessities (through some mishap) render it a hardship to await the regular time for paying. In such cases it will not only arrange to pay in advance, but, in extreme cases, to pay by installments as the money is earned. Trivial causes do not justify breaking established rules, but the clerical regulations of a company are never of sufficient importance, in matters such as I am discussing, to stand against hardships that overtake employes through sickness, death or other

misfortune. In such cases, a company's selfish interest is advanced by extending prompt and hearty assistance.

While the employes of corporations willingly submit to discipline, it is never politic to subject them to it unnecessarily. In connection with the movement of trains, or the care of track, or kindred work involving life and death, stringent rules and regulations are imperative, and must be rigidly enforced. But when rules are not of supreme importance they should give way to unavoidable hardships and unexpected misfortunes.

It should be the purpose and aim of every railway officer—and a paymaster is not only an officer, but a very important one—to build up in the force a love for the property and a sturdy interest in its affairs. These feelings are common to all men occupying dependent places, and follow naturally in most cases where consideration and kindness are shown by the employer or those representing him. They represent a strength and intelligence of action that mere dollars and cents cannot buy. They represent in corporate life what patriotism represents in the life of nations —that indefinable instinct that is aroused within us when calamity threatens our country. In all these things, and more, the paymaster is an important factor. If he is amiable and obliging the effect is favorable; if he is ill tempered, arbitrary, lacking in intelligence or experience, those with whom he comes in contact observe it and resent

it, and not the less heartily because it has no official expression.

The safe custody and honest disbursement of money require qualities of the highest order. Association and habit have much to do with the formation of these desirable qualities. A man of moderate desires, long habituated to the sight and presence of money not his own, comes in time to look upon it simply as a medium for the adjustment of balances. It ceases to be money to him. He receives and disburses millions with no other thought than as to the legality of the transaction. It is the new and inexperienced man who fails to comprehend the character of the trust confided to him. He succumbs and is lost while yet he is arguing that his actions are proper. He lacks the steadfastness that only comes with experience, and without which honesty is but an abstraction.

In selecting men for positions of financial trust, preference should be given to those who have served an apprenticeship in the field in which they are called to act; who by association and discipline have become familiar with the position to be filled.

The office of paymaster upon a railroad is one of importance. Its duties are such as to require fidelity and good judgment. The paymaster should be accurate and quick in the performance of its duties; at all times intelligent in adhering to rules and regulations and alert to protect his company against petty frauds and

surprises of every character. He should be a man of physical courage, courteous in his manners and patient and considerate in his intercourse with employes. Finally, his habits should be sober and his wants such as come well within his salary.

In regard to practical details the pay car should be supplied with everything necessary to the expeditious discharge of business, adequate and convenient safes, furniture, desks, chairs, tables, money racks and kindred articles. Before starting, the route to be followed should be made up, but for obvious reasons, it should be kept private as long as possible. The necessities of the service require that the pay car should run so that it may stop wherever men are at work.*

Everything connected with the pay men get for their work should be simple, uniform and definite. Nothing so demoralizes those who work for others as uncertainty as to when they will get their wages, how much they will get or how long their tenure of office will last. Many men who would have strength of character enough to resist temptation under other circumstances, succumb to such a situation.

Men who handle money frequently become without being conscious of it careless or over confident, paying eventually with their lives, or

* The accompanying rules presuppose the payment of the roll in currency, and many of them are designed to guard against the dangers, real and imaginary, attending such practice. The enforcement of proper rules and regulations in such matters, it may be observed, will prevent mishaps which no amount of courage can retrieve, should they be disregarded.

the loss of their trust, for their neglect. The robbery of express companies and the killing of their employes teach a lesson to men similarly situated elsewhere.

The paymasters of railroads should not have more money in their possession at any time than is absolutely necessary. Whatever the sum may be, it should be securely protected, every precaution that thoughtful regard suggests being observed.

The duty of paying men separated by considerable distances and working under different rules and superintended by different departments, is one of responsibility, and oftentimes of harassing perplexity. The dangers are considerable and peculiar, and liability to pecuniary loss ever present. At best the facilities afforded by a pay car are inadequate, and great vigilance and skill are needed upon the part of the paymaster.

The time in which it is possible to pay railway employes is necessarily restricted, the first half of the month being occupied in examining the rolls and auditing the accounts; the regulations must therefore be simple. The following suggestions, the result of observation and experience in such matters, have been found generally useful:

It is necessary to treat the pay car as a business office of the company, never as a waiting room or lounging place. Smoking and similar practices should be restricted during office hours. The car should be kept clean and the same decorum and

exclusiveness should be observed that is characteristic of a well organized bank. In many respects the business carried on is like that of a bank. As the presence of people not connected with the car distracts the attention of the force they should be excluded as much as possible. The records should be kept written up and filed from day to day, so that in the event of sickness or accident the work may be intelligently taken up and carried forward by new men.

No one should have access to the pay rolls of a company except those whose official duties require it; the wages paid are a personal matter between the employe and the company. The information the pay roll contains should be treated at all times as confidential.*

The great value to a company of its pay rolls requires that especial vigilance be exercised to prevent their loss. They should be kept securely under lock and key when in the possession of the paymaster and other officers of the company. At headquarters they should be kept in a fireproof vault.

It is a duty of the paymaster to detect errors, duplications and irregularities of every name or nature in the pay rolls, notifying the proper

* While the rules and regulations pointed out in this chapter refer more particularly to the payment of a roll in currency by a paymaster, from his car, they have a general application in many instances, without reference to the method of payment. Those who are interested in such matters will, however, have no trouble in separating that which is general from that which is specific.

officials promptly should anything wrong be discovered. Errors in a pay roll should be certified to the timekeeper and the official immediately responsible for the employment of the force. This would be the superintendent, in the case of men hired directly from his office or for whom he makes the roll, and the master mechanic, in the case of shopmen or engineers and firemen, for whom he is responsible. In order to facilitate his examination and render it effective, the paymaster should be at liberty to call for such explanations in regard to the force or any man thereof, or wages paid, as may seem to him for the good of the service.

When paying the roll, and at other times when the car contains money, no one not an official of the company should be admitted to the paymaster's office. It should, moreover, be locked and barred, each of the interior doors being fitted with an extra bolt and chain so as to prevent their being opened easily in the event the locks are forced. The outer doors of the car should also be fastened, except the front door where employes are admitted to get their wages.

The paymaster and his assistants and attendants are required, both by day and by night, to adopt every possible precaution to prevent the surprise or forcible entrance of the car by robbers. This will be facilitated if the windows are properly protected. Even the derailment of the train would not greatly facilitate entrance if proper precautions are adopted in anticipation of such

an event; or, if entrance were effected, it would not always avail, if provision is made in anticipation of such an event!

Every pay car should be supplied with a burglar-proof safe, inclosing a steel chest. It is desirable the outer door should have a combination and a time lock. No one should know the combination except the paymaster, and in order to guard against disaster it should be kept "scattered," and the time lock set, so that in the event of accident time would be afforded for the alarm to spread before the safe could be opened. In the event it is found necessary to keep a considerable amount of money in safes or vaults at headquarters or elsewhere, for use in paying the rolls, such security, even if supplemented by watchmen, should not be relied upon for protection, but electrical connection should be established, if practicable, between the safe and police headquarters, so that in the event the safe is tampered with, through collusion with watchmen or otherwise, effective aid would be forthcoming.

Only such small sums of money as are needed in paying from point to point should be kept in the money drawer or outer safe of the pay car.

In order that work may be accelerated and each employe's wages paid to the utmost farthing, provision should be made by the paymaster for such small change as the situation requires. Moreover, the funds used in paying should be so assorted and arranged as to facilitate the work as much as possible. In furtherance of this, the car should

be supplied with coin racks and other needed facilities of that nature.

When starting to pay the roll only such money as is required for immediate use should be taken, further supplies being forwarded by express as needed.

It is important that paymasters and assistants, including conductors, guards and brakemen, should become experts in the use of firearms, as in the defense of their trust they will everywhere and at all times be expected, if necessary, to sacrifice their lives. It is an unavoidable sequence of their office.

In order to facilitate the safety of their trust paymasters should have the privilege of calling upon superintendents and others for such force (in addition to the attachés of the car) as may be thought proper. In this connection it is needless to say a paymaster is authorized to summarily reject, without giving any reason therefor, anyone detailed for service in connection with the pay train that he may think proper.

The protection of the pay car requires that it should be provided with suitable means of defense. In furtherance of this it has been pointed out by one versed in such matters that each car should contain not less than six revolvers (three of which should be self-cocking), two double-barreled shotguns, two repeating rifles, two cutlasses, and such other means of defense as will prove valuable in preventing or repelling an attack. In order to render these effective, the

force should be schooled in the defense of the car. As an additional precaution, the engineer and fireman should also be provided with effective means of repelling an attack.

The carrying of large sums of money through the streets by persons so generally known as are those connected with the pay cars is particularly hazardous. They should, therefore, accompany each other to and from the banks and express offices, each man being armed. A private guard should also be employed upon such occasions. Never should a paymaster and his clerk perform the service alone, no matter how small the amount of money may be. The appearance of the paymaster and clerk, unprotected, going to or from the car with bag or box, would naturally be a signal to those waiting an opportunity to rob the company.*

* In carrying money to and from banks, express offices and other places, paymasters should be careful not to fall into the habit of acting mechanically, and in order to frustrate any attempt to rob them in consequence of pre-knowledge of their movements, they should not traverse the same route continuously if it can be avoided; it will be well also to consider the advisability of observing a similar practice in passing backward and forward on the road. Sooner or later, it may be presumed, an effort will be made to rob the car. It will add greatly to the ability of the force to frustrate this if they mask their movements. Wherever a paymaster receives money, he must be accompanied by a strong force in transferring it to his car. Trustworthy employes must, if practicable, be selected for this duty. The guard must be adequate to repel robbers. In addition to the force in immediate attendance, it would be well if there were two reliable men, apart (on the sidewalk or elsewhere), ready to prevent the consummation of any robbery

Pay cars and similar offices must never be left unguarded or exposed to intrusion. Constant vigilance upon the part of those in charge is the only guaranty of safety. When on the road, station watchmen should guard the car at night (the usual attendants occupying the car), care being exercised to select a secure place for the car to rest.*

When a pay car is attached to a passenger train, it should, for obvious reasons, be fastened to the preceding car by chain and lock, in addition to the usual coupling.

The paymaster should be empowered to exercise arbitrary authority at all times and places so far as may seem to him necessary to protect the funds intrusted to his care.

When commencing to pay, he should notify his superior officer where he expects to be each night during the trip. Should the program miscarry in any respect, or any accident befall the car, he should promptly advise him of the fact.

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that may be attempted. A force of men necessary to guard the paymaster's office must always be present and must be so placed and armed that it will be impossible for it to be covered (and thus intimidated) by the revolvers or dynamite of one or more robbers. In detailing men to act as guards, it is desirable, so far as possible, that the same men should act. They must be cautioned to treat their duties as confidential.

* These precautions will appear extreme, and they are in some things. However, I am simply recounting the general line of action I enforced on a great railroad under similar circumstances for thirty years without accident or mishap of any kind. M. M. K.

It is also the duty of the paymaster to keep his superior generally advised at all times of everything relating to his accounts and the business intrusted to him.

No disbursement should be made by a paymaster for the company, except upon accounts duly authorized. Upon the completion of the work of paying the force he should write up his accounts and turn the same over to the proper officer to be audited. The cash with the pay rolls, certificates of wages and other vouchers in his hands and necessary to audit the account should also be turned over by him to be carefully examined. Accounts thus audited should be stamped, and date of audit noted thereon. Afterward the pay rolls should be delivered to the proper officer to be filed away for preservation.

Before depositing the rolls, what may be termed a "remainder roll" should be made, embracing the names and other necessary particulars of employes remaining unpaid at the time the accounts were audited. This roll should be verified by the officer auditing the accounts. Afterward, as the names appearing on the remainder rolls are paid, the auditor should attest the fact.

When the examination of the paymaster's accounts is completed, a statement of the payments should be certified to the bookkeeping department for entry by the official making the examination. Cash paid to the paymaster should be

charged to him at the time it is paid. The difference between the disbursements of the paymaster and the amounts received by him, added to the amount on hand at the start, will represent the cash or its equivalent which he should have on hand to balance his account. This balance should be verified by the auditing officer and afterward certified to.*

When pay rolls, certificates of wages, letters of identification or other evidences of debt are paid by officials of a company other than the paymaster, they should be turned over to the latter before he commences to pay the rolls, so that he may note such payments on the rolls. Boarding house bills and other accounts against employes should be arranged, if possible, before commencing to pay the roll. In fact, examinations and accounting of every description should, so far as practicable, be completed before commencing to pay, so that the paymaster and his clerk may be left free to watch unceasingly over the money in their possession, and properly observe and identify the force as it is paid.

*A practice sometimes followed, of turning over to paymasters the total amount of cash that the roll calls for and holding them responsible thereafter for its payment, I do not believe to be a good rule. Such amount of cash should be given the paymaster as he requires. There will always be a remainder roll; something unpaid. He should be credited with what he pays and should produce the balance or return it to the treasurer of the company. I have known of several instances where the practice of giving the paymaster the exact amount of the pay roll (and holding him responsible for the full payment thereof) has been followed, and in every instance disastrously to the company practicing it.

All certificates, orders, letters of identification, and kindred documents, including the rolls, should, when paid, be stamped "Paid and canceled," the date being given. The preservation of these documents is of the utmost importance to a company; care must therefore be exercised to prevent their loss. Where payments are required to be witnessed such precaution must not be omitted. When the names and amounts on a pay roll are called or witnessed by some person other than the paymaster's clerk, the latter should, nevertheless, look over the roll as it is being paid, to see that no error occurs.

When a paymaster is not positive as to the identity of a payee, he should require him to be identified by some responsible person. In all such matters he must adopt the safe course. In case a payee is identified the name of the person identifying must be noted on the roll.

It should be a duty of conductors and foremen to be present when the men employed under them are paid, and when this is impossible a record should be kept of the person acting for them.

It is important that every employe should appear personally before the paymaster for his wages. The paymaster will therefore discountenance the practice of giving orders, save in special cases and for good and substantial reasons. The appearance of the men is essential to a proper verification of a roll. Neglect to enforce this verification is fraught with danger.

No one in the employ of a company should be allowed to discount the pay of an employe or traffic in orders drawn by employes. The rightful possession and authenticity of orders should be carefully determined by the paymaster before he will recognize the same. Orders are not negotiable paper, or paper which a company can guarantee or be in any way responsible for. When it becomes necessary to recognize their issuance, they should be countersigned by the paymaster (and by him only). Before countersigning them, however, he should mark opposite the person's name on the roll "Order given," and the date and name of witness.

Whenever it becomes necessary to pay before or after office hours (as a rule, payments should be made only during working hours), notice should be given in advance, so that the men may be on hand to receive their pay.*

A pay car should not be run after dark. Danger will be avoided by traveling only during the daytime when the force along the road is at work. The car is also then fully guarded from within. On the return trip, if the pay car contains no money, it may be run at night.

In paying at shops, and wherever there are gangs of men, the foreman should be present and stand outside the office, beside the pay win-

*As already intimated, it is desirable that every man on the roll should get his pay at the proper time and place, and exceptions to this rule should not be made a matter of common practice.

dow, where he may identify the men and preserve order.*

To curtail expenses and expedite business, payments should be made on the outward bound trip of the car; no payment should be made on the return trip (except in extreme cases), the pay being sent, upon request, to such employes as were unavoidably absent or did not get their wages at the regular time.

Wages not paid directly to the payee in the usual course of business should be paid by check drawn to his order, except when he would clearly be unable to dispose of the paper without cost or considerable trouble. In the latter cases currency, with the necessary receipt, may be sent by express in care of an agent or other responsible official.

The rule generally followed requiring the paymaster and his assistants to give bonds for the faithful performance of duty is, on the whole, a good one and should be and is generally observed. The risk is merely nominal where fit selection is made and proper discipline enforced. If necessary precautions are observed, loss is not likely to occur either through unfaithful acts on the part of employes or through attempts to rob the car.†

* The men should approach the window in single file.

† In the book on "Disbursements of Railways" much matter incidental to the duties of the paymaster is described in connection with the form and making of pay rolls, certificates of wages, requests for such certificates, letters of advice and identification, orders, and, finally, the payments connected therewith. The forms themselves will be found in the book referred to and will well repay perusal by those interested in the fiscal affairs of railroads.

In reference to the payment of railway employes in other countries, methods differ. That which I have described refers more particularly to practices in North America. The English, with their usual cleverness in matters affecting money, have ways more or less peculiar to themselves. Generally speaking, employes of railways in the United Kingdom are paid their wages in coin, which is forwarded in boxes (called "traveling cash boxes") to the stations most convenient for the employes. Their method is, briefly, as follows:

After the pay rolls have been compiled and examined and compared with the returns from the several departments by the accountant, the totals (less deductions) are transferred to abstracts showing the actual amount of cash required to be remitted to each station for paying the force tributary to it. These totals are then transferred to a general summary, showing the amount of cash needed. The general summary is certified to, and after being entered in the "accounts passed book" (auditor's register) passes to the secretary, who prepares drafts on local banks to obtain the money. The summary is then submitted to the finance committee of the board of directors for approval. After this approval has been given, the drafts, bills and abstracts are forwarded to district cashiers, who obtain the necessary funds from the local banks with which the company does business. The district cashiers then send the money required at each station as

shown by the abstracts, in cash boxes, inclosing the pay bills with the money. In this connection it may be said that the English system of collecting and disbursing railway revenue provides generally for the utilization of country banks at points along the line with whom the collections of station masters, agents and collectors of specified districts are deposited by a district cashier. To this cashier all who make collections within a certain district remit their collections on the day after they are made, and he makes a daily deposit thereof at the local bank.

Payment of wages at stations is made by a clerk or cashier employed at the station. The act of payment, however, is in no case allowed to be performed by the clerk who was concerned in the compilation of the pay bill. The payments must be made by someone else. Each recipient is required to sign his name on the pay bill in acknowledgment of the receipt of his pay, or to affix his mark.

Men at large shops receive their wages in numbered boxes, which are given them as they pass before a pay clerk seated at a table, and the pay bills are certified to as paid according to the prescribed form by the clerk in charge.

When the pay bills (rolls) have been paid, they are sent to the accountant at headquarters. This official charges the several expense accounts with their proportions of the pay rolls. This he does from classified distributions sent to him from departmental headquarters.

PAYING BY CHECKS, DISTRIBUTED BY AGENTS AND OTHERS.

While the payment of wages in currency is a particular and graceful recognition of the convenience and wishes of the employes of railroads, and is in many other respects the most satisfactory method of paying we know of, the movement of trains carrying large sums of money, as do the pay cars of a railroad, is attended with extreme danger in many localities. The use of explosives and other similar devices has increased this risk. Such means of forcing entrance to a pay car and its cash receptacles renders ordinary precautions unavailing. Not only is the money endangered, but the life of every one connected with the train.

Where conditions of this kind exist some device other than the old-fashioned way of sending a pay car with currency over the line must be adopted. The check system has generally suggested itself to railroad men as the best substitute.

In view of these conditions, I find it necessary to supplement what I have said, with an account of the method of paying by check. This system I have found economical in practice, and so far as I know, it has not been attended with loss. If properly systematized the inconvenience to employes that it entails may be minimized.*

*I believe as do most railroad men that a very desirable safeguard is secured by having checks (as well as currency) delivered directly to the employe by a paymaster. What I have to say here, however, contemplates their being sent by the paymaster to agents and others to be distributed. This is a practice quite extensively followed in America. M. M. K.

I have already described several forms of checks used in paying. That which I have adopted in practice is the one drawn to the order of the payee.

This form entails much patient labor in its introduction as those who hold checks and those who cash them will in many cases be exceedingly careless about indorsing them properly. This may be overcome completely in time by carefully scrutinizing the indorsements on every check paid, and in the event of irregularity, notifying the parties in fault and returning the check, if necessary, for correction. The value of this form of check to a railroad company as a receipt, will in the end repay all the labor its introduction entails. The plan of paying I would recommend is based on my own experience in such matters and while it is quite possible that other methods are better, I know this to be practicable, expeditious and economical. It is as follows:

To begin, it will facilitate matters greatly if there are two officials, acting independently, in charge of the work; one to sign and the other to countersign the checks. Both may be called paymasters. It is not material in regard to the title. They should, if possible, be located in the same office, so that as fast as checks are signed they may be turned over, with the rolls, to be countersigned. In this way the work may be pushed with great vigor and without the loss of a moment. Both the official who signs the checks and the official who countersigns may properly

be required to give a bond. The checks may be drawn on a bank, or on the treasurer or other official of a company. The system I have used contemplates their being drawn on a bank. However, it is not material.

In regard to details, checks drawn to cover wages earned in preceding months are dated on the first day of the month in which they are drawn; when they cover wages for the current month, they are dated on the day on which they are made, thus: checks drawn in February to cover January wages are dated on the first day of February, while checks drawn in February to cover February wages are dated on the day they are made. The date of the checks may be inserted with a stamp, as may also the name of the month in which the service was performed.

No check should go out of the office in advance of its date, or before the money has been deposited to cover the same. The money to meet checks should be deposited on or before the checks leave the possession of the paymaster; it is hardly possible to conceive of any other system being proper or safe. No reputable business man thinks of issuing a check without at the same time putting aside the money to meet it. If a paymaster sends out checks for ten thousand dollars on any given day, that amount should be put in the bank on the same day, or previously, to the credit of such paymaster.

Before the close of business hours each day, the paymaster should notify the disbursing officer of

the amount required to be deposited in the bank to cover the checks he has issued. In making these deposits the checks should be drawn by the disbursing officer to the order of the bank on account of the paymaster, thus: "Pay to the order of the Chemical National Bank, account of John Smith, Paymaster." If pay checks are drawn on the treasurer instead of a bank, the amount needed to pay them should still be scrupulously set aside on or before the day the checks are issued.

As often as once each month the bank should write up the account of the paymaster, in whose name the account at the bank is kept. When the account is thus written up by the bank, the checks and deposit book should not be sent to the paymaster, but to an auditor, to be examined and audited. Thus, an additional safeguard will be thrown around both the official signing and the official countersigning. The same rule in regard to the method of auditing pay checks should be observed when they are drawn on an official of a company instead of on a bank. Nor should the checks ever be returned to the paymaster. When his account has been audited, the checks should be filed away by the auditor. The pay roll itself should be retained by him.* The

* If the paymaster draws his checks on the treasurer or cashier of a railway company, instead of a bank, the same general course of procedure regarding the audit of his account and the custody of the papers should be observed. The paymasters being on the staff of the treasurer, the account should be audited by some one not connected with or under the jurisdiction of the treasurer.

foregoing plan is designed to secure protection and economy and enforce essential details.

As already intimated, checks are drawn to the order of the employe. Great care must be exercised in filling them up to prevent subsequent alterations. The writing should be in a heavy hand in order that the ink may thoroughly penetrate the paper. The best quality of writing fluid should be used. The amount written in the body of the check should commence close to the left-hand margin of the paper, in the space provided. The unoccupied space should be carefully filled in with an irregular line. When the amount of the check does not include the fraction of a dollar, the character (#) should follow immediately after the written amount, and an irregular line drawn through the unused portion of the space provided, terminating with a similar character, thus: "Forty-five #—#." The character indicated should not be employed when the amount includes the fraction of a dollar, the proper way then being to write the fraction closely following the written amount in dollars, drawing an irregular line through the unused space, thus: "Forty-five $\frac{50}{100}$——Dollars." The word "and" is not necessary between the amount (in dollars) and the fraction. Whenever the amount of a check is for a fraction of a dollar, it should be written as follows: "Cents only #——$\frac{50}{100}$ Dollars."

As the amount for which a check will be drawn will rarely exceed two hundred dollars, a

good precaution against the raising of checks is to limit the amount for which they may be made to say two hundred dollars by printing upon the face of each check, "Not valid for any sum exceeding two hundred dollars." As a further precaution, the amounts for which checks are drawn should be cut into them by a perforating machine. To save labor, a perforating machine or indelible ink stamp may be employed limited to multiples of ten dollars. Thus a check good for nine dollars and thirty-six cents would be perforated or stamped "Under ten dollars;" a check good for sixteen dollars and forty cents would be perforated or stamped "Under twenty dollars," and so on up to the limit of two hundred dollars.

If loss occurs through the raising of checks when these precautions are observed the law exempts the drawer of same from responsibility in the matter.

By reference to the pay check (Appendix B), it will be seen that a place is provided for designating the official or employe to whom the check is sent for delivery. It is the duty of this person to deliver the check to its owner and to no one else, and, so far as possible, to ascertain that the payee is entitled to the check for services rendered the company. Great care, therefore, should be exercised to clearly designate the person who delivers the check to the owner, on the face of the instrument and also on the record thereof kept by the paymaster.

On the back of the check is printed the following receipt, which the payee should sign before his check is cashed:

"This check is accepted by me in full payment and satisfaction of all claims of every name and nature against the Blank railroad company or companies owned or controlled by it as specified in the body of the check. I also hereby acknowledge to have received the amount this check calls for.

.....

(Signature of person in whose favor check is made.)"

Checks should be engraved on the best safety paper and numbered consecutively by the printer.

Checks are drawn to correspond with the names and amounts entered on the pay roll. When checks are drawn to order it is of great importance that there should be no mistake in entering the names on the roll, as the check must correspond with the name as entered. If the name is wrong, the indorsement on the back of the check will not properly conform to it. Thus the check will be thrown out by the bank, and the employe and the company put to inconvenience, and perhaps expense.* The names as entered on the pay

* This emergency will suggest to the treasurer or officer in charge, the desirability of formally calling upon everyone in any way concerned in making the pay roll, or in keeping the time, or the record of the men whose names are to appear on the roll, to exercise care; first, to see that the exact name of the person is known; second, to see that it is so plainly transcribed on the pay roll that there can be no mistake in regard to any letter or part of the name; third, that care is exercised in taking an impression of the roll not to blur or otherwise render it imperfect. The necessity of the situation compels accuracy, and after awhile it will be found quite as easy, and much more satisfactory, to be accurate than to be partially so.

rolls should therefore be correctly given in every respect and in every case. The same care must, in fact, be exercised in making a pay roll that there is in drawing the checks.

In depositing money with the bank to the credit of the paymaster to meet the checks he draws, the check of the treasurer may, as a matter of precaution, be drawn to the order of the bank, to the credit of the paymaster. Such checks will not be good at any other bank, and can be used only for the specific purpose intended, namely, a deposit to cover checks drawn by the paymaster. Money to the credit of a paymaster should be held inviolate by the bank to meet checks properly signed and countersigned.

In paying a roll no check should be signed or countersigned until both the parties signing and countersigning have compared, personally or through a trustworthy deputy, the check with the roll, to ascertain that the amount is right, that the roll is approved for payment, and that the wages have not previously been paid.

Before a check is signed its numbers should be inserted on the pay roll, opposite the payee's name. The paymaster should indorse on each sheet of the pay roll, as he issues checks therefor, "The employes on this roll paid by checks drawn ——— 189 (when not otherwise paid) ———, Paymaster." This should show when the check is drawn, not its date. The official who countersigns the checks should make an indorsement on each page of the roll to this effect: "The officials

and employes named on this roll have been paid by checks drawn by ————, Paymaster, (when not otherwise indicated) and checks therefor have been countersigned by me. ————, Paymaster," This method of registration, or something similar to it, will prevent duplicate payments.

In order to enforce full accountability the officials who sign and countersign checks should be held equally responsible for the correctness and authenticity of checks issued.

In order to prove the accuracy of the checks drawn the gross amount should be balanced from day to day with the pay roll to see that the two correspond.

In order to minimize labor, only the number of the check is inserted upon the pay roll, the name of the bank being omitted. This latter may be indicated by prefixing a letter. Thus, "C. 14" stamped on the roll in the proper column would indicate a check drawn on the Chemical National Bank, number 14. As the numbers of the checks entered on the pay roll will follow each other consecutively, they may be stamped therein with a numbering machine.

The person indicated on the check as receiving it for distribution affords a clue to the pay roll on which the man's name appears, should it be necessary subsequently to refer to the latter. This clue would be lost, however, if the check were sent for delivery to some remote place as it would be if the employe were transferred or had moved away. In such cases, therefore, the number of

the pay roll should be inserted on the check, in addition to the name, so that it may be easily and quickly traced.

Discretion should be allowed the paymaster as to the persons to whom checks are to be sent to be delivered to their owners. But in no case should checks be sent for distribution to time-keepers or those whose duty it is to enter the names on the time book or pay roll. Nor should checks be sent month after month to the same person for distribution. A very good audit of the pay roll may be secured by sending the checks to different persons each month to be distributed. Thus, one month the checks for a particular station will be sent to one official; the next month to another official or employe; the next month to still another, and so on. In this way collusion will be rendered more difficult, if not impossible.

It is a part of the duty of the person who delivers checks to ascertain, when practicable, whether the persons in whose favor they are drawn actually performed the service specified or not. Should there be any reason to doubt this in any case the check should not be delivered until the matter can be investigated.

In sending checks for distribution to points where a large number of employes are congregated, they should be put up in packages in the order the names are entered on the pay roll. When two or more branches of the service are embraced on the same roll a separate package should be made for each. When difficult to locate

a person for whom a check is intended, or when doubt arises in connection therewith, the name of the roll upon which the name is entered should be inserted on the face of the check, as a means of identification.

In sending checks to be distributed it will be found convenient to have a printed letter of advice issued by the paymaster to the person who makes the distribution, in form, say, as follows:

"Inclosed find checks on account of pay roll for ——, 1898. The amount entered on the envelope indicates the number of checks herewith. Thus, if the amount is $10, there should be ten checks inclosed. Please deliver the checks yourself, without delay, to parties in whose favor they are drawn. Every check not delivered in five days will be returned to me by express, stating why not delivered. It is the duty of those to whom checks are sent for distribution to see that they are delivered to the particular persons in whose favor they are drawn, and to no one else. If necessary to establish identity of persons claiming checks you will communicate with the head of the department or adopt such other measures as the circumstances of the case require. In cases of doubt checks should be withheld until the matter can be thoroughly investigated. The person delivering a check is held responsible under his bond, should he deliver it to the wrong person. If you find it necessary to forward checks to another station for delivery they should be sent by express. A particular duty that you are expected to perform is to instruct those who receive checks as to how they should be indorsed.* If checks are not

* See the book "Fiscal Duties of Agents and Conductors," which explains fully the minutiæ to be observed in indorsement of checks, orders, time tickets and similar documents. The instructions contained in the book "Fiscal Duties of Agents and Conductors," illustrating the manner of indorsing checks by those who do not know how to write, should be incorporated in this circular of the paymaster. One of the most difficult things

properly indorsed they cannot be accepted by banks, and thus a great deal of trouble is occasioned. The indorsement should be made, therefore, properly in the first place. The checks of the company afford merchants and others a convenient means of making remittances. Tradesmen, boarding-house, restaurant and hotel keepers should cash them as an accommodation to their patrons. If those who hold checks are unknown to the agent or at the bank where they wish to get them cashed, a responsible person must be sent to identify them, as checks should not otherwise be cashed. Those who hold pay checks of the company should be able to get the full amount thereof in currency. In other words, they should not have to pay a premium in order to get their money. In the event any one should suffer a loss in getting his check cashed, immediate notice of the fact should be sent to the paymaster, so as to prevent its recurrence. Those who receive checks are requested to study the rules governing the matter and carefully observe same."

The letter should cover all the salient features of the situation, leaving as little as possible to the discretion of the recipient of the checks. It will also be found to simplify matters to hand to each person to whom a check is delivered a paper explaining the formulas that he must observe in connection therewith in order to save

in connection with the payment of wages by checks is to get employes to observe legal requirements in regard to indorsements; thus, when an employe acknowledges the receipt of money on the back of the check by his cross (×), the name of the witness will, quite likely, be missing, or the cross will be inserted in the wrong place. In other cases, a check drawn in favor of a name spelled in a particular way, the indorsement will be spelled in some other way. These irregularities occasion trouble and involve some risk. But by constant watchfulness and continued reiteration of the rules and regulations governing, the employes of a company, including those who cash the checks, may be so fully instructed finally in regard to the method of indorsement that irregularities will cease.

himself and the company trouble and expense; it should also contain a list of banks in his neighborhood where checks are cashed without discount. It should point out that every station agent, cashier and ticket seller of the company is required to pay checks on presentation when they have the funds on hand to do so; it should emphasize the fact that under no circumstances should the holder of a check pay a premium to get it cashed; that in the event a charge is sought to be made, notice of the fact should forthwith be sent to the paymaster, so that the matter may be remedied. It should also point out that in addition to the banks with which arrangements have been made for paying checks, other banks will, quite likely, cash pay checks without discount, and that merchants, traders and hotel, restaurant and boarding-house keepers should cash the checks of those who have dealings with them without charge therefor; furthermore, that when holders of checks are not known to those who are to cash them, they will require to be identified; also, that, as checks are drawn to the order of the employe, the name in which they are drawn and the name in which they are indorsed on the back must be the same, otherwise they will be thrown out by the banks.*

*As there will be more or less persons to whom checks are given who will not indorse them properly, the banks into whose hands such checks come should, so far as practicable, refer them to the paymaster or treasurer of the company before throwing them out. A merely technical defect is not material

If the substance of the above information is conveyed each month to those to whom checks are given, employes will in time become thoroughly informed. They will then be able to aid new-comers, and so it will be possible in time perhaps to avoid reiterating the information every month.

Instances will arise where neither the funds of the agent nor the accommodations in other directions will be sufficient to meet the payment of checks. In such cases it will be necessary for the company to forward the money required. If the treasurer sends the money, he may charge it to the person to whom he sends it, and the latter may then remit the checks, as a setoff, to the bank or elsewhere as the system of the company requires. If it seems best that the paymaster should forward the money, it will be easy to throw around the practice such safeguards as may be necessary to properly carry out the system of checks and safeguards that the interests of both the paymaster and the company require.

Instances will arise requiring the sending of funds to local banks along the line with which to cash pay checks. The method employed will vary according to circumstances. One way is to require the local bank to forward its draft for the amount it requires to pay the checks that will

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from the standpoint of the railroad company, and when no object is to be attained by throwing them out (sending them back to original holders) it will order their payment.

be presented at its counter, the treasurer of the company forwarding the money by express; or to obviate the labor and risk attending the handling of the money by the treasurer the money may be forwarded directly from the issuing bank to the bank requiring it to pay checks. If the local bank will not forward its draft, the treasurer may send the money by express, to the agent in care of the bank, to be held by it in the name of the agent. In such cases the agent will release the money in amounts as required, accepting in exchange therefor checks paid by the bank. All such checks should be indorsed as being payable to the bank to which the agent makes his remittances.

Another plan is to have the agent accept the draft of the local bank for the entire amount of cash he turns over to it. The draft should be drawn to the order of the bank to which the agent remits. When the account is handled as last described, both the agent and the bank should be notified of the fact when money is thus forwarded to pay checks. Thus, the bank should be notified that it is to receive a certain sum on account of the agent; on the other hand, the agent should be notified that the money has been sent to the bank. In the event more money is at any time forwarded to a bank for account of an agent to pay checks than is needed, the currency should be returned by the bank to the treasurer or official who sent it to the credit of the agent; or, the draft of the local bank may be taken, filled

out in the manner specified above, which draft the agent should remit to balance his account.*

As the value of the checks that are sent out by the railroad company will be merely nominal a nominal amount only should be inserted on the package. This amount may be utilized to convey information as to the number of checks enclosed;† thus for a package containing fourteen checks, the amount as stated on the expense envelope may be made $14.00, or the same number of dollars as there are checks. By this means the person to whom the package is sent will know at a glance how many checks should be enclosed.‡

While as a matter of precaution the amount of a pay check is restricted to $200.00, there will arise special cases where it will be necessary for the paymaster to draw checks for larger amounts. This will be so in the case of transfers of funds, settlements with insurance companies, boarding-

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One object of these rules is to secure faithful accounting without taking unnecessary risks, either in the case of corporations or agents.

† I do not contemplate the inclosure of a letter of advice giving details being sent with the checks.

‡ I may say further in this connection that the system described here does not contemplate the sending of a receipt to be signed and returned by the persons who distribute and receive the checks. As the check is drawn to order, and certifies the service covered, and is an acknowledgment in full, a receipt is unnecessary. I can see no object in procuring a receipt from the person who distributes the checks; such procedure would involve a good deal of clerical work and, therefore, expense, and accomplish practically no useful end. The plan here proposed contemplates inclosing the checks with the *printed* letters of advice referred to above, and that is all.

house keepers, justice courts, and so on. A special form of check may be designed for this use. Such checks, however, should be signed and countersigned by authorized officials.

If in the order of business it should become necessary to change or alter the name of an employe on a check, as it frequently will be, it must be done formally on the back of the check. The authorization of the change must be duly signed and countersigned as was the check in the first instance. In the book "Disbursements of Railways" there will be found forms of pay roll for use where payment is made in currency, also one when checks are used.

As there will be more or less wages remaining unpaid, it will be necessary there should be a remainder roll. It will consist in the main of the wages of those to whom time tickets or checks have been issued without being able to find the payee. Checks of every kind in the hands of agents and others awaiting claimants, uncalled for at the expiration of five days, should be returned to the paymaster. Checks remaining uncalled for in the hands of the paymaster at the expiration of sixty days, should be reconveyed into the treasury and the amounts brought on the remainder roll. In order to accomplish this the checks should be deposited to the credit of the paymaster drawing them, after they have been indorsed by the auditor or treasurer, as the case may be. As a set-off the paymaster should be charged on the books of the company with a like

amount and the remainder roll (unpaid wages) credited. Afterward as these wages are called for, they should be paid as in the first instance.

In reference to the audit of the paymaster's accounts when the official having the work in charge has completed his task, he should notify all parties interested of the result of his labor, so that such entries may be made on the books and such examinations and comparisons instituted as the case requires. As the number of checks that the paymaster will issue will be very great, it may be found convenient for him to keep his account with the bank in a book specifically provided for the purpose showing the amount deposited to the credit of the paymaster, and the total amount of checks drawn each day.

The methods of paying in currency and by check portrayed in the foregoing chapter conform to practicable methods which have been tried and found trustworthy. Every system, however, must adapt itself, in minor details, to circumstances. The principles underlying all are, or should, however, be the same. So that while much that I have written will apply, details will differ. No system can be fully explained on paper or met in advance by any ready-made formulas. Situations and the personality of officials and attaches enter so intimately that they must be considered. While general and important outlines may be stated, it remains for the

paymaster and his force to supplement established rules, from hour to hour, with such additions and changes as the necessities of business require, simplifying the work wherever practicable, and adding such safeguards as practical observation shows to be needed.

Everything valuable about a railroad depends upon the intelligence, watchfulness and talent of the officials and their subordinates immediately in charge. This is not less true of the pay department than of other branches of the service. Upon the paymaster and his force rests in every case and under every system the responsibility of personally supplying any needs lacking in the methods they are called upon, in a general way, to carry out. They must therefore be watchful and thoughtful, not depending to-day on what was effective yesterday, but striving all the while to extend and strengthen the safeguards the needs of business require.

BOOK III.

SOME OF THE . . . DUTIES AND PRECAUTIONS OF THE TREASURER'S OFFICE.

CHAPTER I.

SOME OF THE DUTIES AND PRECAUTIONS OF THE TREASURER'S OFFICE.

The rules and regulations that follow are, in the main, such as have been found to be of practical use in collecting the receipts of railroads and paying their bills. Like all rules that are of value, they have been suggested by actual experience; generally by mishaps real or threatened. They form what may be called a primary code for the government of the local treasury department of a railroad. Their object is to facilitate business and prevent mishaps; to anticipate mistakes, omissions and irregularities, and by anticipation, prevent them as far as possible.

What I have to say, will not, it is probable, contain anything especially new to those familiar with the practical operations of the treasury department of a railroad. Such men are peculiarly well versed in the routine of the service as it affects their office; above all men they are schooled in technicalities and knowledge of detail. To them accounts and the measure of safety that should surround money are an open book. However, as I have before had occasion to say, I do not write for experts. They are more often than otherwise better informed than I am myself. I

write rather for those who desire to familiarize themselves generally and specifically with the treasury department, or who wish to take up the subject impersonally as a part of the general theme of railway knowledge.

In reference to rules and regulations provided by particular men, or for specific occasions, like those that accompany this, it is to be remembered that while they may not be adapted to all conditions, still they are valuable in their suggestive features. It is not what men read that makes study valuable, but rather what reading suggests. I am led to make these reflections here because it is probable that many of the rules and regulations comprised in this volume will not tally with the practices of many railroad companies, but notwithstanding this, the devices herein described and the rules herein provided will have, in the main, general interest because they meet situations more or less peculiar to every company.

The custodian of the funds of a company is its treasurer. There may be two, one in New York or London and the other at the local headquarters. It is not always easy to identify the latter. This is because of the dissimilarity of organizations. Railroads are built up around local conditions and men very much as other interests are. Because of this, the treasurer is oftentimes difficult to identify by his title. He

may be called a comptroller, cashier, chief clerk, paymaster, or vice-president. It does not matter. I have noted some of his duties and peculiarities elsewhere.*

By whatever title the treasurer may be known, he has charge directly of the receipts and cash of his company. He also looks after the payment of its bills, no matter what their purport, whether for dividends, interest, sinking funds, taxes, construction or operation, and no one can act independently of him in his office. His measures, in connection with his duties, are as a rule highly effective, though usually very simple in their makeup and operation.

The staff of the treasurer comprises a cashier and such assistants and clerks as the situation requires. While he is not strict in the government of his force, he requires that those who handle money and accounts shall be honest and live within their income. He believes, as do other men, that those who do not thus live, will sooner or later disgrace themselves and those who trust them.

The habit of saving makes men contented, heightens their ambition, strengthens their character and broadens their intelligence and usefulness.

It is a general rule, and a good one, that the treasurer's staff, including the paymaster and his attachés, should give bonds for the faithful performance of duty. In furtherance of this, when-

* In the book "Railway Organization."

ever a bond is required, or an existing bond is to be increased, the official having charge of such matters should be promptly notified of the fact by the treasurer. It is the duty of the treasurer also to carefully scrutinize bonds exacted for the faithful performance of duty in his office. This work should be performed at least quarterly.

The cashier is the treasurer's chief of staff. In the absence of the treasurer, the cashier and assistant cashiers act in the order of their rank.

If anything goes wrong, or the cashier is in doubt as to the course to be taken at any time, or if methods of business need changing, or work falls behind, the treasurer's attention should be called to the fact immediately.

The assistant cashiers, if two are needed to look after the cash in the treasurer's office, should perform the functions of tellers.

Payments on vouchers, certificates and other evidences of indebtedness should be audited at the close of each day by the cashier. In addition to this daily examination, he should make a thorough audit of the cash and papers in the hands of the assistant cashiers at irregular times, as often as once a week.

Common business precaution demands that the risks attending the handling of cash should be restricted as much as possible. No one who handles money, therefore, should assume any greater responsibility or risk than is necessary. Nor should anyone be trusted further than the requirements of business compel.

The accounts of those who handle money should be systematically audited at frequent intervals, as suggested above, and should be scanned hourly by superior officials with such care as the situation renders possible. If the incumbent of an office of trust is honest he will be grateful for this, as it will lesson his risk. If he is dishonest, it does not matter how he feels. Surveillance will limit ability to do wrong, if it does not prevent it altogether.

It should be a rule to be observed that if anyone connected with the treasurer's office knows of any improper practice; anything that has been done that ought not to have been done; anything that has been left undone that ought to have been done; anything that is wrong or subversive of good discipline, he should lose no time in notifying the treasurer. Until he does, the responsibility rests with him; afterward it rests with the official. The importance, therefore, of immediate action is apparent.

The general cashier is a natural and proper supervisor of the paymaster and his clerks, as he is of all who carry or handle the company's money. It is thus his duty, so far as practicable, to see that no risk that can be avoided is incurred in handling, transferring or caring for money; also, that the amount of money in the hands of the company's agents shall be restricted as much as possible.

Payments should not be made to paymasters in advance of their needs or in excess of their

immediate wants. Cash in their hands, in excess of actual needs, should be promptly turned over to the company upon their return after paying the rolls.* No honest man who is wise will desire to take the responsibility of caring for a cent longer than is necessary.

Paymasters and others should exercise every possible precaution in transferring money between banks and offices; also in guarding it at other times.

Particulars in regard to the movement and custody of moneys should be treated as confidential by all whose duties acquaint them with the facts. Such matters should not be a subject of gossip or of record in books to which others have access, in advance of the occurrence.

No subordinate except the cashier and assistants, should be authorized to receive money paid into the treasurer's office.

Only legal currency or coin can be received. All defaced, clipped and punched coins; all coins that are worn; all that are not bankable at their face value; also all foreign currency or coin, if taken, can only be accepted at current market prices.

Checks or drafts upon which the company would have to pay exchange or a fee for collection should not be accepted, unless the amount of exchange or cost of collection is provided for.

No check or draft, the payment of which is doubtful, should be accepted. Should it happen,

* This presupposes payment of the rolls in currency.

however, that such a document is received, steps should forthwith be taken to collect the same, or to have it certified by the bank upon which it is drawn.*

Before opening a package, received by express or otherwise, containing money or valuable papers, examination should be made to ascertain its condition. In case any discrepancy is discovered between its stated inclosure and its contents, or in case it is received in bad order, or contains a counterfeit or a worthless or irregular check or draft, a statement of the facts should be made upon the envelope signed by the person opening the package, and the sender forthwith notified by telegraph.

If a remittance is found to be deficient in amount, the envelope which contains such remittance should be returned to the sender.

Envelopes in which remittances have been received should be preserved for six months.

As a precautionary measure a record should be preserved by the treasurer of remittances that are over or short or that contain counterfeit or bad money.

No delay should occur in sending back worthless money or irregular checks and drafts.

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* Upon the receipt of a check or draft, the following indorsement should be written or stamped thereon, namely: "Pay to the order of ..... Bank." Under this indorsement, the name of the company should appear, also the signature of the treasurer. A document thus indorsed cannot afterward be misused. I assume that the checks and drafts are deposited in a bank for collection.

Receipts, in proper form, for moneys collected, should be given at the time the transaction occurs, and for each specific amount. Several receipts thus issued cannot afterward be taken up and a receipt for the total amount given in lieu thereof, unless the consolidated receipt states upon its face the date the amounts were paid to the person signing the receipt. This rule is necessary for the reason that for every receipt outstanding a corresponding entry should appear upon the books.

Receipts given for money should not only specify the name of the payor, but also the name of the account (person) to which it is to be credited. It will thus always be easy to trace.

Receipts for moneys from agents, conductors and others should be sent them within twenty-four hours. Promptness is very important in matters of this nature,

Moneys should be credited on the cash book on the day received.

The rules and regulations governing the handling, care and payment of money by paymasters, described elsewhere, should generally be observed in the treasurer's office.

No time should be lost in depositing cash not needed in the conduct of business. Risk will be lessened thereby.

Checks, drafts and other bankable paper coming into the treasurer's office should be deposited daily as received.

In order to insure concurrent knowledge, drafts and checks requiring the indorsement of the treasurer should first be initialed by the cashier.

It is the duty of the cashier to compare, at the time, deposits as credited by the bank with the amount charged to the bank, so that errors, if any, may be promptly corrected. This duty should not, however, be performed by the cashier who prepares and makes the deposit.*

To avoid unnecessary labor and risk the drafts of the treasurer should be drawn in favor of the bank in which they are deposited.

Deposits of currency and coin should be made by an experienced and trusted messenger provided with adequate facilities for protecting the valuables intrusted to him.†

A record of each deposit made by the treasurer should be retained by him. This record should show details, namely, amount in currency; coin; number of each check or draft; by and on whom drawn; amount and place where payable; also totals. The letter of advice accompanying the deposit need, however, only specify the particulars required by the bank.

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*In speaking of the cashier, what I have to say in these rules it will be understood applies also to the assistants.

†When necessary to send money by express, it also should be handled only by a trusted messenger. When performing such duty he should be accompanied by at least two trustworthy persons. Messengers and assistants engaged in transferring money or valuable papers from place to place should be well armed and ready for any emergency.

Agents should be required to remit funds each day as received. If remittances are made to a bank, the latter should render a daily statement, in detail, to the treasurer. Such statement should be examined when received and errors forthwith reported.

Bank deposit books should be balanced monthly by the bank and details of the balance forthwith spread upon the records. The account should be audited by the general bookkeeper or some one not in any way connected with the transactions involved.

Promptness should characterize the collection of bills and accounts due the company and in acknowledging the same. Uniformity of method should be observed so far as possible.

In the event a debtor fails to pay, or refuses to honor a draft, the agent where the charge originated should be notified immediately and measures concerted to protect the company. The treasurer should also be advised of the delinquency (as he should be of all delinquencies) and of the measures that have been taken.*

It sometimes happens that charges on freight are not known at the time of delivery. When

* One of the greatest railway managers I ever knew always gave this stereotyped advice to subordinate officers: "When everything is going right I do not want to see you or hear from you, unless you have something new to communicate or advice to ask; but when anything goes wrong I want to know of it at once." He thus kept himself advised at all times of the things necessary for him to know, gave his officers confidence and avoided harassing them.

risk attends such transactions, the approximate amount of the charge must be collected in advance.

No practice of a rival line, or rule or custom, justifies trusting anyone whose credit is not good.

Drafts should be made for amounts due from carriers and others for traffic balances and on other accounts as soon as ascertained.

The checks and drafts of a company should, to minimize the risk, be engraved and the paper used should contain the best safety features. They should be numbered by the printer consecutively and bound in books of convenient size. When not in use the books should be kept in a fireproof vault, accessible only to the treasurer and his assistants. Every precaution should be taken to protect them from unauthorized use.

Checks should be authenticated by the signature of the treasurer, and countersigned by the cashier drawing the same; also, if practicable, by the auditor.*

When the cashier signs checks for the treasurer he cannot also countersign them. In such event an assistant must countersign. Both the one who signs and the one who countersigns are responsible, and must be conversant with the transaction.†

* It is a general practice and a good one to have checks authenticated by two independent officers, the treasurer and auditor.

† No one can sign or countersign checks who has not been given express authority by the treasurer.

In making payments to corporations and firms, checks should be drawn in favor of the corporation or firm, never in favor of an individual.*

When a check or draft is detached from a book to be used as a specimen or to replace a spoiled blank, or for any other purpose, the reason for detaching it should be stated on the record and certified to by the cashier and assistant.

Spoiled checks or drafts should be canceled by writing the word canceled plainly in red ink across the face thereof. The signatures, if any, should also be destroyed. Canceled checks or drafts should be pasted in the book from whence detached.

When a new supply of checks or drafts is received, they should be examined in detail to see that there are no errors or omissions and also in regard to the paper, printing, numbering, binding, and so on.

In those cases where a check is reported lost, stolen or destroyed, before being paid, the bank must be notified at once to stop payment and the fact noted on the record of the missing check. Upon receipt of a written acknowledgment from the bank that the check has not been paid, a new check may be issued. But, in order to protect the company in case the missing check should

* And in this connection it is proper to say that no checks should be issued to persons not favorably known or vouched for, except in payment of company's vouchers; in other words what are known as "accommodation" checks (in exchange for currency, etc.) should not be given.

come into the hands of innocent holders, it is necessary that the party requesting another check should file with the company a bond of indemnity sufficient to cover the amount of the lost check and any expenses that may be incurred in connection herewith. But no bond should be accepted for less than one hundred dollars. The bond should be signed by the party requesting the check and by two responsible sureties. Each surety should be worth the amount of the bond in realty, over and above debts, incumbrances and exemptions. The bond of a public guaranty company is preferable in this case as it is in others.

Suitable provisions should be made for preserving bonds of this character.

If a new check is issued in place of one missing, the amount of the latter must be charged to the bank, stating number of check, date and in whose favor drawn.*

Those who handle cash in the treasurer's office and elsewhere should be provided with necessary appliances for the accurate and expeditious per-

* A statement should also be made on the record of the missing check say as follows: "This check having been reported lost, the bank has been ordered, under date of.....18...., not to pay same. The check not having been paid at that time, a new check, No....., dated.....18...., has been issued in its place." This history of the transaction must be signed by the treasurer or the cashier and an assistant. The following form of letter used in notifying the bank to stop payment of a check covers the ground: "..... Cashier, ... Bank. Dear Sir: Please advise if my check No....., dated.....18..., payable to..... for $....., has been paid: If not, please stop payment of the same."

formance of their work. They should also be protected by secure inclosures, as are the tellers in banks. Other persons should not be allowed access to these inclosures. The inclosures should be kept locked.

The treasurer's office should never be without a sufficient force to guard it. Moreover, the force should be so placed and armed that it will be impossible for it to be overcome by two or more robbers.

A fireproof vault with burglarproof safe is necessary for depositing the cash and valuable papers of the treasurer. Both vault and safe should have time locks.*

As a protection to the cash vault, a trustworthy watchman should visit it at frequent intervals during the night and on Sundays and holidays. A record should be made of each visit on the indicator which should be provided for that purpose. The cashier who opens the vault should examine the dial of the indicator and assure himself that the visits of the watchman have been made as required during the intervals.

It is the duty of the cashier and his first assistant jointly (or, in the absence of the cashier, then of the first and second assistant cashiers)

* In regard to the money or other valuables in the custody of the treasurer, the security afforded by good vaults and safes, even if supplemented by watchmen, should not be wholly relied upon for protection; but electrical connection should be established when practicable with the police headquarters, so that in the event it is sought to tamper with the vaults or safes through collusion with the watchmen or otherwise, effective [redacted]ll be forthcoming.

to see, before leaving the office each night, that all cash, currency, checks, drafts, negotiable paper, securities and valuable papers are placed in the safe and that the latter is locked and the time lock set. It is their duty also to see that check books, draft books, vouchers and account books, also the office records and papers, are placed in the vault each night, and the latter locked.

The safe should at all times be kept locked and the combinations "scattered." The grated door of the vault should also be kept fastened.

The combinations of the vault and safe should be known only to the treasurer and his assistants. It is the duty of two of the latter, conjointly, to see that the doors are locked and the combinations "scattered" before they go home at night.

The time locks should be set so that the locks cannot be opened at night or on Sundays or holidays. They should be set to be opened half an hour before business recommences.

Method and order are highly desirable in caring for the vaults and safes of a company. They should be clean and the locks kept well oiled and free from rust.

The vouchers, checks, drafts, certificates of wages, bills and other papers coming into possession of the treasurer should not be intrusted to anyone except those connected with the office, especially delegated to look after such matters.*

*Under no circumstances should money and valuable papers be intrusted to those who have not been in a company's employ a sufficient length of time to have established, by practical experience, a reputation for integrity and discretion.

In the conduct of business it will be found necessary to exercise constant vigilance to prevent unauthorized persons from having access to the vouchers, papers and books of a company.

Bills in favor of or against individuals and corporations, including the pay roll, are confidential in their nature. Information in regard to them should not, therefore, be divulged, and access to them should be restricted to authorized persons.

The number and character of the books a company keeps, how and where they are kept, the nature of the files, place of storage and kindred matters, are also confidential matters.

In the event an agent is unable to open his safe because of a defective lock or otherwise, he should notify the treasurer of the fact by telegraph. In the event the safe is in the immediate vicinity of headquarters, a man may be sent to open it. Otherwise it may be ordered sent to headquarters. In the latter case it should be addressed to the treasurer and notice sent him. On its arrival it should be opened in the presence of two or more cashiers, and the contents returned to the person who forwarded it, or such disposition made as the case requires.

The drawing of drafts on the treasurer by officers and agents is oftentimes unavoidable in business, but it requires to be governed by carefully devised rules and regulations. No one should have the right, except under specific regulations that make the treasurer the arbiter of

each transaction. If it is admitted that drafts may be drawn at discretion, the privilege is certain sooner or later to be abused and the company held responsible on the ground that it is commonly understood by bankers and others that the privilege is granted, or at least exercised.

In the conduct of business it is sometimes necessary to make drafts upon the treasurer for right of way, taxes, advanced charges, and other items that cannot await the usual routine. When it is necessary, the authority should be given by the treasurer. In all cases an account should be opened with the drawer and the draft charged to his account. Afterward, when the account has been passed upon and audited the charge may be transferred. Drafts for Advanced Charges should be drawn to the order of the carrier to whom the amount is due. That minimizes the risk. Other drafts should have printed on their face "Not valid unless paid by the treasurer on presentation at his office." The last named drafts on reaching his office should be referred to the treasurer before being paid; they should also be certified to by the bookkeeper.*

An itemized monthly return should be made by those who make drafts. The total amount should be charged upon the books to the drawer

*The person to whom these drafts are given need not send them to the treasurer for acceptance but may deposit them for collection. If right, the treasurer will pay on presentation. That will be his way of accepting them. If they are not right he is at liberty to throw them out without the company being responsible in any way.

and credited to an account that may be known as "Drafts drawn by agents." As the drafts are paid they are charged to this account; the balance shows the drafts outstanding.

As I have already suggested, no one should be allowed to make drafts on the treasurer without specific authority.

When vouchers are paid before approval, the fact that they have been so paid should be plainly written across the face of the voucher, also on the back underneath the filing, as, say, "Paid by John Smith, agent, Pitsburgh." This will prevent their being paid twice. If the vouchers are paid by draft on the treasurer, the draft is charged to the drawer, and the voucher, when received, is passed to his credit. Thus the account is balanced. When drafts are made on the treasurer, the utmost promptness should be exercised in rendering statements or vouchers therefor, so that the accounts may be settled while the matter is fresh and open accounts may not be prolonged. When drafts are drawn on the treasurer that have not been authorized by him, or for which he has not the authority, they should be referred to the proper department for certification. Thereafter it is the duty of such department to see that the voucher covering the same is forthcoming in due course. A good rule to be observed by railroad companies is to have printed on the face of all drafts "No protest." This will save unnecessary annoyance and expense, and will not weaken or invalidate any rights.

Drafts coming from agents or officers should be signed by the agent or officer in person, and not by a subordinate.

Drafts on the treasurer, except for advanced charges, may as a precautionary measure, be certified and recorded by a bookkeeper before being paid. Reference should, however, be made to the treasurer in all doubtful cases. As a rule, no payment should be made except upon an approved voucher unless it receives the approval of the treasurer.*

All vouchers, drafts and other accounts should be carefully scrutinized before being certified to or paid, with the view to ascertaining their authenticity and correctness. In the case of vouchers and drafts, the receipts and indorsements connected therewith must be technically correct and all papers that properly belong to the documents duly attached thereto. Furthermore, no changes must have been made in the body of the instrument. As a precaution, vouchers that are used as drafts by the payee should be compared with the register before being paid, to see that the name and amount have not been altered.

In all matters affecting the payment of vouchers, uniformity is to be practiced as far as possible. Thus, payments should be made promptly and with the least inconvenience to

* It is a duty of the treasurer's office to see that bonds are given by those who make drafts sufficient to cover any possible risk the company incurs.

everyone concerned. When practicable, they should be made direct to the person entitled to the money. If made through agents or others, the best method should be ascertained and, having been ascertained, should so far as possible be followed afterward. Thus, if amounts due a particular person are to be paid through another, they should always be sent through the same person and, as nearly as possible, at the same time each month, so that the payee may know when and how he is to receive his money.

Payments to employes of a company should, whenever possible, be made to them in person.*

It is a rule of corporations, and one to be observed, that vouchers and pay rolls shall not be paid until they have been passed upon by an approving officer.†

Before paying a voucher reference should be made to the accounts of the company to see if there are contrary charges or set-offs to be deducted. Scrutiny should be exercised also to see that the voucher has not already been paid.‡

* This matter I have discussed as I have others relating to the paying of wages in the book devoted to that subject.

† The exceptions to this rule occasioned by the exigencies of business are few and have to be met by special provision.

‡ Accounts are sometimes paid and the voucher made afterward. In the event a voucher has thus been paid, the fact should be noted on its face; also below the filing on the back, by the person making the voucher. In the event these precautions have been overlooked the voucher will, it is likely, be receipted. This latter is in itself an indication that the bill has been paid, and should prevent the treasurer's office paying it a second time.

. In the case of vouchers in favor of carriers their accounts should be examined before paying, so that the amount may be withheld if thought desirable. In many cases vouchers are credited to the company on the books, and the balance adjusted by draft.

Vouchers in favor of agents relieving them of freight or other charges should be further verified by comparing with their account current before being finally allowed.

Vouchers should, so far as convenient, be paid by check. If the interest of the company requires a voucher to be paid in currency, the department interested should note a request to that effect on the back of the voucher underneath the filing. In such cases the payee, if not personally known to the treasurer or his assistants, must be identified; but in no case should subordinates in the office where the voucher originated perform this duty. However the treasurer may at his discretion refuse to pay a voucher in currency.*

Especial care should be exercised to avoid taking receipts liable to be misunderstood, or about which contention may afterward arise. The original voucher should, if possible, be receipted. In the event it is not, the particulars recited in the form used must coincide with the original paper.

If there is no reason for delaying payment of an account, notice should be sent the payee the

* Whatever the treasurer may do in this direction, his assistants are authorized to do in his absence or when acting for him.

day it is ready for settlement to call and get his money.

Vouchers and accounts to be paid through the mail or by express should be sent on the day on which they are received by the treasurer, unless good reasons suggest delay.*

It is convenient and, in many cases, desirable to have vouchers payable along a company's line paid by its agents from their receipts. In no case, however, should a voucher be sent to an agent to pay which exceeds his daily collections. Great caution should be exercised in this respect at headquarters, as experience shows that the attachés of the office quickly fall into the habit of forwarding vouchers so large that it requires the receipts of two or more days to pay them. If a voucher cannot be paid by the agent from one day's receipts, it should be paid by check, or currency should be sent. In pursuance of this it will be well to adopt the rule that vouchers exceeding seventy-five dollars shall not be sent agents to pay from their receipts, except under special directions.

It will sometimes be necessary for the treasurer to direct the payment of a bill without forwarding the voucher therefor. In such cases, the employe paying the amount takes the receipt of the payee and sends the same to the treasurer to be affixed to the voucher. Such receipts should

* Especial and prompt action should characterize the payment of petty bills. Delays that may be excusable in the case of large vouchers are inexcusable here.

be carefully scrutinized when received and attached forthwith to the voucher.*

When more convenient, vouchers may be sent to the payee to be collected by him through the bank or otherwise the same as a draft or check. In such cases, the following indorsement made on the face of the voucher, and on the back of same under the filing, will facilitate the matter and avoid unnecessary risk:

"This voucher is a sight draft, payable through the clearing house on John Doe, Treasurer, Metropolitan Railroad Company, in Philadelphia, and will be paid by him if properly approved, receipted and otherwise found correct. It is invalid if altered in any way or if papers are detached."

Instructions should accompany vouchers handled in this manner, stating requirements necessary to protect the company and the payee in form say as follows:

"Herewith please find voucher of this company, which is to be used as a sight draft on the undersigned and will be paid on presentation, when properly approved, audited and receipted, and if found correct in other

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* It may happen in the conduct of business that the treasurer will be requested to pay claims against the company for loss or damage, etc., before a voucher can be made. In such cases the following form has been found useful:

"To agent..... Please pay.....dollars on account of (whatever the claim may be) order (name of officer making request) and hold receipt therefor as cash until voucher reaches you. .....Treasurer."
To the officer requesting the settlement of the claim the following communication may he addressed: "Have wired agent..... to pay.....dollars in settlement of his claim for..... Please make voucher and note on back of same, under filing, 'Paid by agent.' .....Treasurer."

respects. It is invalidated if altered in any way, or if any papers are detached. The following instructions should also be observed:

"The receipt at the bottom of the voucher should be dated and signed in a technically legal form. The payee should sign by his own hand. Officials should sign their full names and titles. The signatures of firms should not be signed by a clerk or other person unless authority to do so is attached to the voucher. The signatures of corporations should be by an authorized officer, his name and title being given in full. Receipts by mark should be in legal form, the mark being witnessed by a responsible person whose residence should be stated. Stamped receipts or signatures in pencil will not be accepted. Should there be any mistake in the voucher, it should be returned to me for correction.

"Papers attached to a voucher should not be separated therefrom. Such papers are necessary to the completeness of the voucher, and should not be disturbed.

"In the event a voucher is lost, a bond of indemnity will be required before a duplicate will be issued."

No voucher should be thus used, when it, or the papers attached, contain information which if given publicity might be prejudicial to the interest of anyone. It is therefore of importance that those handling such vouchers should make a careful examination in each case before the vouchers are sent away.

Vouchers relieving agents of charges standing against them should be stamped on the back underneath the filing before being forwarded, as follows: "To be receipted and remitted to the treasurer as cash."

In the event the payee of a voucher cannot be found, or it is necessary to delay payment for special reasons, a letter should be sent the official

authorizing the voucher, stating that payment is delayed and giving the reason therefor.

In the event a creditor requests that moneys due him shall be paid to a third person, care should be taken to see that the order is in legal form. It should be specific as to amount and provide that the receipt of the person in whose name the order is given shall be a release and discharge to the payor for the amount.* Orders upon which money is paid should be attached to the vouchers they cover. If an order covers several payments, it should be attached to the first voucher paid. Before paying subsequent vouchers thereunder, reference should be made to the original to see that it properly covers the case and has not been countermanded; reference should be made to the order on all vouchers, as say "Pay to Merchants' National Bank, as per authority dated July 9th, 1898, attached to voucher No. 1826, paid July 10th, 1898."†

* The order, generally, should be in form, say, as follows: "To the Blank Railway Company: Pay to (say) the Merchants' National Bank the sum of Twelve Hundred and Sixty-nine Dollars and Ten Cents ($1,269.10), due (or to become due) from said railway company to the undersigned. And the receipt of said bank therefor shall be a full and sufficient release and discharge to said railway company for said amount as fully and effectually as if such receipt had been duly executed by ourselves. The Northern Elevator Company, by Richard Roe, President."

† Should the order be intended to cover more than one voucher, it should be specific as to the amount it is to cover or the time it is to run, as say: "Pay to (say) Edward Brown, of Chicago, all sums of money due and to become due from said railway company to the undersigned, until the said sums so

In order to prevent loss of vouchers (paid or otherwise), such documents should not be taken from the treasurer's file except for sufficient cause and upon a certificate of a responsible official. In such cases a receipt should be given by the person to whom the voucher is delivered, which receipt should be filed in its place.*

paid shall amount in the aggregate to Ten Thousand Dollars. And the receipts of said Edward Brown for all sums paid to him in pursuance of this order shall be a full and sufficient release and discharge to said railway company for all such amounts so paid, as fully and effectually as if such receipts had been duly executed by ourselves. This order shall be and remain in full force until the aggregate sum of Ten Thousand Dollars ($10,000) shall have been paid to said Edward Brown, or until it has been revoked by us by a notice in writing to the treasurer of said Railway Company and such notice acknowledged in writing and duly accepted by the said Edward Brown. The Southern Steel Company, by John Doe, President." If the order is to cover a particular period instead of an aggregate sum, as provided in the foregoing, it should read, say, as follows: "Pay to (say) Jonas Stimson, of Chicago, all sums of money due and to become due from said railway company to the undersigned up to and including the first day of March, 1898. And the receipts of said Jonas Stimson for all sums paid to him in pursuance of this order shall be a full and sufficient release and discharge to said railway company for all such amounts so paid, as fully and effectually as if such receipts had been duly executed by ourselves. This order shall remain in full force until the said first day of March, 1898, or until it has been revoked by us by a notice in writing to the treasurer of said railway company and such notice acknowledged in writing and duly accepted by the said Jonas Stimson. Western Wheel Company, by Richard Roe, President."

*It will be a good plan to have the blanks for these receipts bound in book form with a record attached to each form. Particulars should be entered in this record, and thus by referring to it the vouchers outstanding may be ascertained and, if necessary, looked up.

It will occur in the conduct of business that after vouchers have been entered on the cash book the money will not, for some reason, be paid. In such cases it is necessary to formally reconvey the money into the company's treasury to place the transaction where it was originally. This may be accomplished in various ways.*

In the event it is impossible to get a receipt for money paid on a voucher, indorsement should be made on the document to that effect.† Trans-

* The following method is suggested, the Endorsement to be made by the Auditor on Voucher: "Credit was taken for paying this voucher on the cash book ....., 189.. The money was never paid in consequence of (giving the reason). A bill has accordingly been made against the treasurer for the amount of the voucher, which bill was paid by him on ....., 189.., cash being charged with the amount (on the cash book) on last mentioned date. The effect is to make this a good and sufficient voucher to the treasurer in its present state. ....., (is without a receipt) Auditor." The Bill to be made against the Treasurer in the above case should recite: "For amount of voucher No. ....., for $..... in favor of ....., charged on cash book ....., 189.., as paid. No payment having been made, this bill is made in the regular routine of business as a part of the system for reconveying money in a formal and technical manner back into the treasury of the ..... Company." This bill should be certified by the officer who made the voucher, so that his record may also show the cancellation. The entry on the cash book (and cash slip) should be, say, as follows: "To reconvey into the treasury of the company amount of voucher No. ....., in favor of ....., charged on cash book ....., 189.., but not actually paid."

I have described the cancellation of unpaid vouchers by journal entry in the book "Disbursements of Railways."

† The following form is suggested: "This voucher was paid by the treasurer, by check No....., dated.....189..., on the.....Bank of....., drawn to the order of..... The check, properly indorsed by the payee, was presented and paid

actions of this nature sometimes arise in connection with the wages of employes. In the event an employe's wages are garnished or he dies before receiving his money, the amount should be turned over to the treasurer and credited to an account that may be known as "Wages garnished and wages due deceased employes." There it should remain until authorized to be paid by the proper department. It will sometimes happen that after the amount has been entered on the cash book the money will not be paid. In such case it should be credited back, the same course being followed, practically, as described above for reconveying money into the treasury.*

When the papers attached to a voucher are so bulky as to preclude their being filed with the document, or any other good and sufficient reason exists for not attaching them, they may, at the discretion of the officer in charge, be detached and filed with the department certifying to the account. In such cases notation should be made on the voucher to that effect.†

by the bank on the.....189... The evidence of the payment of the money in good faith by the treasurer is therefore complete, and this voucher in its present shape is a good and sufficient voucher to him. .....Auditor." If a case should arise where the payment was made in currency witnesses to the transaction should attach their affidavits to the voucher.

* It will be found useful to make a statement on the first of each month of the items making up the account "Wages garnished, and wages due deceased employes."

† The indorsement should read: "The papers that were attached to this voucher have been placed in the hands of..... for preservation and reference when needed, being filed under the name of the payee and audit number....."

Cases arise in the operation of railroads where a saving may be effected by paying a bill in a certain way or at a certain moment. This is so as a rule in regard to monthly bills for lighting stations and offices. In such cases it is not always practicable to await the making and auditing of a voucher. The bill should, however, be certified before being paid, care being taken to see that it is correct. Afterward (say not later than the twelfth of the month in the case of illuminating bills) a voucher should be made in favor of the treasurer covering the bills thus paid.

The forces of railroad companies are paid, as a rule, by a paymaster. It will occur, however, that groups of men will require to be paid and there will be no paymaster available for the purpose. In such cases, the treasurer may remit the necessary funds to an agent with direction to make the payments, or he may instruct him to make payment out of his station receipts.* When money is thus sent an agent, the amount should be charged to his account and his receipt taken therefor.

In sending money to pay men, the recipient should be instructed to promptly return any balance there may be after paying the men who present themselves. Such amount should be remitted by the agent, with his station receipts, to his own credit.†

* These payments by agents are fully treated in the book "Fiscal Duties of Agents and Conductors."

† An exception would, of course, be made to this rule if the money sent the agent in the first place was not charged to him.

Wages paid by the treasurer, also certificates of wages presented or paid at the treasurer's office, should be governed by the rules prescribed for kindred payments by paymasters.

If a certificate of wages is cashed by a bank or other unauthorized party, or should reach headquarters through irregular channels, or suspicion attaches to it in any way, the treasurer should, through the paymaster or otherwise, investigate the case and ascertain if the person worked for the company as stated. But no certificate should be cashed unless it is presumably correct or the guaranties are such as to protect the company against loss. If a certificate is wrong, investigation will elicit the fact. But it should not be forgotten that in the event anything is wrong the company would not have redress against an innocent party if the right of such party to trade in the certificates of the company had previously been recognized. This principle, it may be observed, applies not only to certificates of wages, but other obligations that might be issued irregularly by those connected with a company.*

Wages withheld from persons leaving the service of a company (pending settlement of their account) should be remitted them on the day the account is finally adjusted.

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*Because of this risk certificates of wages and other evidences of debt issued to employes should have printed across their face "Not negotiable." This will prevent fraudulent papers passing into the hands of innocent holders except at their own risk.

In the conduct of business more or less applications are made by banks along a company's line for permission to issue their drafts in exchange for the currency collected by the local agents. In the event the treasurer desires to comply with such requests he may say to the bank making the application that it would afford him much pleasure to do so without conditions, but as he is frequently asked to extend such favors to parties not entitled to confidences of this kind, he finds it necessary to ask that payment of the drafts shall be guaranteed.* The giving of this guaranty while an inconvenience doubtless to the bank will save the company harmless and is only a reasonable exaction for the favor it extends. It is the custom of many roads, if not all of them, to surround the care of their material and implements with needed safeguards. This is as true of the treasurer's office as of the supply department. Thus the company's postage stamps, postal cards, wrappers and other valuable evidences, are carefully guarded and finally disbursed only upon requisitions signed by authorized parties. They are also accounted for the same as other supplies. When purchased they are charged to material, and as used are debited to the account upon which used. Responsibility, it is found, is greatly heightened by requiring requisitions for stamps and other sup-

* For forms of bonds to be used in such cases, see appendix of book "Fiscal Duties of Agents and Conductors."

plies of this nature to be approved by heads of the departments.

No one is, for obvious reasons, permitted to sell or traffic in the postage stamps, postal cards, wrappers, etc., of the company. These supplies should be purchased as required and receipts taken by the treasurer for payments as in other cases. These receipts may, for convenience, be carried as cash until the end of the month, when a voucher may be made to cover the same.

The same care must be exercised in the care of stamps that is observed in the handling of money.*

Business will be simplified and security heightened in the treasurer's office by writing up the cash book daily and by accurately balancing it at the close of each day with the cash on hand; the two should agree—not nearly, but exactly. This assurance is the only one that the cash may not be way out of balance. It is, therefore, vital.

The notices that accompany remittances should be carefully compared with the amount thereof at the time. If remittances are made to the bank instead of the treasurer, the bank statement (which should be sent to the treasurer with the notices of remittances) should be verified by the treasurer by comparing the amount reported received with the amount claimed to have been remitted by the sender.

* The disbursement of stamps and other property of this nature should be tabulated and exhibited monthly or yearly as in other cases for the information of those responsible for such expenditures.

Remittances should be received with promptness and regularity from agents, conductors and others. It is the duty of the treasurer to watch this chain of remittances with unceasing vigilance and careful scrutiny. In the event of a break (for which there is no explanation forthcoming), notice of the fact should be sent forthwith to the officer designated to look after such matters. Serious mishaps may thus oftentimes be averted.

Matters relating to cash must not only be right, but must seem to be right. The trail must be broad and clear. Thus, in bookkeeping no erasure may be made on a cash book. If an entry is wrong it should be ruled out, without being wholly obliterated. The entry as corrected should be interlined above, or a new entry made. Every entry on a cash book should fully and clearly explain itself.

In regard to routine matters, the same rules apply to the treasurer's office that operate in the case of other offices, only they must be more carefully and technically observed. Safety and confidence will be enhanced by such a course.

Those connected with the office must not only transact affairs in due form, but must seem to do so.

Papers, letters and documents needing the signature or action of the treasurer should be attended to daily as they arise. Procrastination is little less than criminal in this office, as it indicates lack of orderly arrangement.

The principle of business so generally followed, and so highly necessary to railroads, that each day's work shall be complete in itself, and that nothing shall be put off until to-morrow that can be done to-day, cannot be disregarded by the treasurer or his assistants.

The treasurer's name should be formally used only by those authorized by him and in such manner as he may direct.

In reference to the records of the office, care should be taken to preserve copies or transcripts of everything done. In no other way can the office substantiate its acts, and this it should be able to do in the most trifling matters.

The intimate relation that the treasurer's force sustains to a company, and to those who have transactions with it, requires that all its affairs should be treated by its attachés as confidential.

In conclusion, it may be said that the affairs of the treasurer's office may be especially facilitated by treating everyone with tact and courtesy.

BOOK IV.

AMELIORATION OF THE CONDITION OF RAILWAY MEN AND THEIR FAMILIES IN CASES OF ACCIDENT, SICKNESS, DISABILITY AND DEATH.

CHAPTER I.

PROVISION IN THE UNITED STATES.

The efficient and profitable working of railways is dependent upon the loyalty and co-operative effort of the vast and growing army of employes who operate these properties. The relations that exist between the two are of vital importance. They require to be fostered as they are by kindly interest on the part of the owner and faithful service on the part of the employe.

Owing to the independent, self-reliant character of our citizens, co-operation as between employer and employe to provide for the latter in case of sickness or disability, has not received the careful consideration generally that it has in Europe, or that it should receive.*

* Five great railroads, the Grand Trunk, Pennsylvania, Baltimore & Ohio, Reading and Burlington are to be singled out as marked exceptions to what I say. These companies have for many years given the subject most earnest and intelligent attention, and have, moreover, contributed liberally and continuously in furtherance of the project. In fact, no companies have done more than they to build up an interest in the subject. Their methods and the results that have accrued therefrom, I refer to with more or less particularity further on. The system in force on the Baltimore & Ohio was obtained originally, I understand, from the Grand Trunk. Continuous and systematic effort, however, has been made from the start to perfect it, so that to-day, there are many interesting features in connection with it not presented in so striking a manner in the organization

Absence of general interest in co-operative relief projects among us does not, however, indicate any lack among employes of American railroads of interest and pride in the properties they serve, or lack of desire to add to its prosperity. It only indicates a wish to get on in their private affairs without aid or suggestion.

New communities are like children in one respect—that they cannot be led to anticipate, by proper provision, the needs of failing health, accidents, old age and death. However, the railway men of America are not as disregardful of the matter as they were formerly. The railways, on their part, are more and more taking an active interest in the personal welfare of their employes; in providing them lodging houses and reading rooms; in looking after them when sick; in furnishing them technical education at their

of any other company. The Pennsylvania road has also displayed great industry coupled with remarkable tact and unselfish efforts in the work of ameliorating the condition of those in the employ of that great property. Because of this, I have selected the methods pursued by the Pennsylvania Company and the Baltimore & Ohio for the purpose of illustrating the progress that has been made in America in connection with the matter. The officers and employes of the railroads I have referred to, who have carried on the relief department so successfully in connection with their properties, cannot be too highly commended for their arduous and unselfish labors. In addition to the extended efforts made by the roads named, the Lehigh Valley and Northern Pacific have organized and maintained a relief fund generally similar to that described further on. It is possible that other companies, of which I have no knowledge, have taken up the work. However, the initiatory labor so far has fallen on the companies named, and to them belongs the credit of carrying forward the work.

shops; in aiding them with free transportation; and, finally, when they are no longer able to perform active work, in assigning them to lighter employment where they may grow old free from anxiety and want.

While railroads have gone on developing their methods of transportation, they have not altogether lost sight of less practical matters. Progress in the direction of aiding employes, however, has not been great and has been retarded, more or less, by local causes, and the feeling on the part of employes that every man should take care of himself. In numerous cases disinterested and kindly action on the part of railway corporations, looking to the relief of their employes, has been met by a spirit of contention and sharp criticism. This has been unfortunate, because it has retarded laudable efforts in this direction. Railway companies have been afraid to act. A better understanding of the subject will do away with the friction, because the action of the railroads is predicated upon the good of the employe and those dependent upon him.

The relief department of railroads is designed to insure the employe's worldly condition. It should also heighten the mutual regard the employer and employe have for each other; cause them to recognize more and more the community of interest that exists between them. Its outgrowth is systematic and co-operative effort to provide for the accidents of life that overtake

railroad employes, including such provision as is possible for old age.

The subject is still in its infancy here, but much attention has been given it in Europe, where they think more of such things than in America. I shall not attempt to philosophize on the subject nor exhaust it, but simply point out its practical features and workings. The work will be facilitated by dividing the subject. It may be remarked, however, in advance, that methods are not uniform. They take on local colorings. Peculiarities of men and characteristics of property govern more or less.

The plan of relief for sick employes and in cases of accident or death, which I describe, is generally similar to that practiced on the London & North-Western, Pennsylvania, and Baltimore & Ohio railroads. Each has borrowed from the other. In the case of the English company contributions for insurance against accidents are compulsory, and two classes of contributors exist; namely, those who accept the benefit of the fund in lieu of any claim against the employer, and those who do not waive this right. Naturally the benefits the latter derive from the fund are less than the former.

On the Baltimore & Ohio, relief in case of sickness, accident and death is contemplated, and these branches are consolidated in one department of the service. Upon another road only two of these features will, perhaps, be maintained, namely, sickness and accident; another

company will provide simply for loans to employes in case of distress, and so on. Nor are the contributions that different railroad companies make to the relief department alike. They are dependent, as are other expenditures, upon ability, disposition, needs, etc. One company will undertake to operate the department at its own cost, pay interest on moneys and, in the event of deficiencies, make them good; another will find that it is able to pay the expenses, make good any deficiencies and donate an amount equal to ten per cent. of the contributions of employes; another company will donate an amount equal to the total sum contributed by employes, and rest there. One company undertakes to contribute stated sums annually—six thousand dollars to the sickness, accident and death fund, thirty-five thousand dollars to the pension fund, and twenty-five hundred dollars toward defraying the expenses of physical examinations of applicants, etc.

Little has been done in the United States looking to the pensioning of employes. The experience of our companies has been that where plans for relief were entirely voluntary, and were skillfully handled, employes have heartily cooperated with employers in this direction. The relief department steadily grows in popular favor. This is highly gratifying, because it tends to better the condition of the employe when overtaken by the inevitable accidents of life.

With these preliminary remarks, I proceed to give such particulars as I am able in reference to the sickness, accident and death fund.

The object of this fund is to provide for the payment of definite amounts to employes (or to their beneficiaries, as the case may be) when disabled by accident or sickness, and in the event of death either from accident or natural cause. In connection with the fund the relief department exercises a certain supervision over sanitary matters affecting the health of the employes.*

The fund is created and maintained jointly by the employe and the employer in the following manner: By the monthly contributions of the employe graded according to wages paid; by the company's payment of interest on balances of cash on hand, payment of operating expenses,

* The following extract from a pamphlet by Dr. W. T. Barnard shows the working of the relief department of the Baltimore & Ohio Railroad in the direction of sanitary supervision. "Some years ago," Dr. Barnard writes, "when smallpox was prevalent at many points tapped by the Baltimore & Ohio system, over twelve thousand employes (and in dangerous localities their immediate families) were vaccinated by the medical inspectors at the department's expense, and though many employes were greatly exposed to contagion, loss than a dozen were affected and but two died. When diarrhœal, dysenteric and typhoid disorders become prevalent at any point, they are immediately checked by appropriate remedies placed at the disposal of the medical inspectors, master mechanics and supervisors with explicit directions for use. Malarial disorders, especially, have been kept well under control by the distribution of large quantities of approved anti-periodic remedies, which are at the command of every member, and thereby much embarrassment and inconvenience to the service have been prevented."

furnishing office room, granting the services of officers and agents without expense to the fund, and finally by appropriations when deficiencies occur through unexpected mishaps; also by profits on investments of the fund, and by gifts and legacies.

Membership in the fund is by subscription. It is voluntary and may be terminated at will.*

The relief department is organized by constituting an advisory committee made up of an executive officer of the railway company as a member and *ex-officio* chairman, and by six members chosen by the railway company and six members elected by the members of the fund.†

The advisory committee has general supervision and sees that the business is conducted in accordance with the regulations provided. It determines the use to be made of any surplus; arranges for the investment of the money; appoints persons to audit the accounts at stated times; proposes amendments or changes in the regulations, and acts upon questions brought before it by appeal from the decisions of the manager of the fund or otherwise respecting the rights of members.

* On the Baltimore & Ohio road membership is compulsory except in the following cases: Officials; employes who entered the service prior to 1880 and who have been continuously therein since that date; clerks, telegraphers and those of similar employment and who are not exposed to accidents; agents receiving commissions only, and employes receiving twenty dollars per month or less.

† I am describing the method of the Pennsylvania railroad.

The department is under the charge of a manager assisted by medical examiners and the necessary clerical force.

The manager has general charge of the business of the department, subject to the control of the chairman of the advisory committee. With the latter's approval he may employ needed clerical and medical forces. He determines questions arising in connection with the operations of the department and makes the advisory committee such reports as it requires.

The difficulties in connection with the establishment of a fund for relief in cases of sickness, accident and death may be classed as practical and theoretical; the practical being those actually experienced; the theoretical those advanced as reasons against the establishment of such a fund.

The principal obstacle that has been encountered in the United States, those familiar with the matter claim, has arisen from not basing the fund, either wholly or partly, upon the voluntary action of employes with a provision that an employe can become a member of the fund or not, as he chooses, and may withdraw when he pleases.*

A difficulty attending the early operations of the relief fund was found in obtaining suitable

* It should be stated, however, that the Baltimore & Ohio relief department (very comprehensive of its kind) is compulsory and has been successfully operated since 1880. However, its operation has been attended with more or less dissatisfaction, and the company has found it necessary to recede from some of its premises.

persons to conduct its operations, the work being novel and the labor great. This difficulty, however, was only temporary.

It has been found that the employment of a corps of medical examiners stationed at points along a line, and having more or less important supervisory functions, has occasioned adverse criticism and some misunderstanding upon the part of employes. This may be overcome by the exercise of tact and could doubtless be entirely obviated if foreseen and guarded against.

In some instances legislation has been invoked to prevent the formation of a relief department. In New Jersey such a bill passed the assembly by a small majority, but was not brought to a vote in the senate. It was urged that the company by the establishment of the fund sought to evade legal liability. To this the company answered that comparatively few accidents involved liability on the part of the company and in connection with these the point was often so involved that only a court could determine the matter. Litigation thus arising occasions in every instance delay and expense with consequent suffering, the final decision being as often as otherwise against the claimant. An assured sum promptly received is in every case of distress better than the uncertainty of a suit with its delay and possibility of loss. The system of relief, however, that the legislature sought to prevent, provided that those who thought they had a just claim against the

company for a larger amount than the relief fund might exercise their option as to accepting the latter or testing their legal claims; it was provided, however, that the claimant should not avail himself of the fund in addition to the right to prosecute the company before the courts. Another objection urged by the legislature was that the charter of a railway did not authorize it to engage in the insurance business. This was met by the statement that a relief department did not come within that category being a benevolent association purely.

In reference to the theoretical objections that have been offered to the establishment of relief funds on railroads in the United States, they have been partially voiced by the president of a Michigan company in a communication to one of our governing bodies. He says: "No successful attempt has yet been made by this company to establish an insurance or guaranty fund of any sort. The difficulty seems to be: first, the impossibility of making such insurance a success without requiring it to be compulsory with all employes; second, the difficulty of fixing the premium satisfactorily to employes between those occupying the more hazardous and less hazardous positions; third, the desire on the part of many of the employes to obtain their insurance through associations to which they belong (such, for example, as the brotherhood of locomotive engineers); fourth, the diffi-

culty of satisfying employes who have been insured and subsequently left the service of the company that they are not entitled to a refund of a portion of the premiums paid by them during their employment with such company." Another communication to the same body from one of the officers of a railroad society, referring to the formation of relief associations by railroads, is quite bitter. It says: "Some of the principal lines have lately organized so-called relief associations for the ostensible purpose of caring for our dear employes, but the real purpose is to undermine and ultimately to destroy the brotherhood and place the men entirely at the mercy of the corporations. A brakeman does not receive wages commensurate with the work he performs or the dangers he is compelled to undergo, and is unable to keep up membership in more than one organization, and as a portion of his wages is retained each month for membership in the relief fund, he is necessarily restricted to it. A protest will result in discharge, and a discharge forfeits all moneys paid into the fund. The relief fund is a delusion and a snare, and many of the brakemen know it from bitter experience."

The working of the relief fund for accidents, sickness and death, inaugurated by the Pennsylvania company in 1886, is extremely interesting. Its report for the year 1896 shows the scope of the fund. It is as follows:

Contributions of members	$694,776.49	
Contributions and deficiencies paid by company	43,756.38	
Interest	13,599.46	
Contributed by company for expenses of operating the fund	103,748.11	
Total receipts		$855.880.44
Death benefits paid	$257,048.48	
Disablement benefits, accidents and benefit, paid	353,070.72	
Total benefits paid	$610,119.20	
Operating expenses, all of which were contributed and paid by the company	103,748.11	
Total disbursements		$713,867.31
Surplus for the year		$142,013.13

The net balance in the fund at the close of the year was $388,284.73, the result of eleven years' operations. The average death benefits paid for 1896 was $555. During 1896 the membership increased 4,421. The total membership at the close of the year was 40,853. Since the organization of the fund the receipts have been $5,933,609.26, and the disbursements, including expenses of operation paid by the company, $5,496,641.17. The total cost of operating since its inception has been $1,067,-174.48.

In regard to the details of the Pennsylvania fund, contributors are called members. When the department was first established, membership was for six months and was open to all employes irrespective of age, length of service, or physical condition.* Thereafter conditions

* This privilege of allowing everyone to enter was extremely liberal. The object was to prevent criticism or the incurring of the ill will of employes. The concession was believed to be offset by advantages in other directions.

precedent to membership were that the person should be under forty-five years of age, should have served a month continuously and should have passed a medical examination. Members are divided into five classes, and their contributions are as follows: First, employes earning not more than $40 per month, contribute 75 cents per month; second, employes earning more than $40 and not more than $60 per month, contribute $1.50 per month; third, employes earning more than $60 and not more than $80 per month, contribute $2.25 per month; fourth, employes earning more than $80 and not more than $100 per month, contribute $3 per month; fifth, employes earning more than $100 per month, contribute $3.75 per month. A member may be in a class lower than that which his earnings entitle him to enter, and may change to any class not higher than that determined by his wages, except that if he be not over forty-five and has been continuously in the company's service for five years he may, upon passing a satisfactory examination, enter a higher class than that to which his wages entitle him. Members are entitled to the following benefits in case of accidents occurring in the company's service: For each day while disabled members of the first class are entitled to 50 cents per day for fifty-two weeks, and 25 cents per day after fifty-two weeks till recovery; second class, $1 per day for fifty-two weeks, and 50 cents per day after fifty-two weeks till recovery; third

class, $1.50 per day for fifty-two weeks, and 75 cents per day after fifty-two weeks till recovery; fourth class, $2 per day for fifty-two weeks, and $1 per day after fifty-two weeks till recovery; fifth class, $2.50 per day for fifty-two weeks, and $1.25 per day after fifty-two weeks till recovery. Also surgical attendance during disability.

If disabled by sickness or by injury other than accident in the company's service, for each day after the first three days, members are entitled as follows: First class, 40 cents per day for fifty-two weeks; second class, 80 cents per day for fifty-two weeks; third class, $1.20 per day for fifty-two weeks; fourth class, $1.60 per day for fifty-two weeks; fifth class, $2 per day for fifty-two weeks. After fifty-two weeks and until recovery further allowance is made either on basis of fifty per cent of foregoing rates or such aid is given as the company decides. Contributions are not required from members during the continuance of a disability entitling them to benefits, but if the incapacity resulting from sickness or injury extends over a period of more than fifty-two weeks contributions for the death benefit must be renewed.

In case of death the beneficiaries of members receive, as follows: Ordinary—First class, $250; second class, $500; third class, $750; fourth class, $1,000; fifth class, $1,250. Maximum—Twice the above sums.

A member may, on entering any class, or within two years thereafter, upon passing a medical examination, take an additional death benefit, equal to one or more death benefits of the first class, but not greater in amount than the death benefit of the class in which he at the time contributes. When the maximum death benefit is taken the total amount which a member in any class can have is as follows:

	Death benefit of class.	Additional death benefit.	Total death benefit.
First class	$ 250.00	$ 250.00	$ 500.00
Second class	500.00	500.00	1,000.00
Third class	750.00	750.00	1,500.00
Fourth class	1,000.00	1,000.00	2,000.00
Fifth class	1,250.00	1,250.00	2,500.00

The rates of contribution for additional death benefits are for each $250, as follows:

For a member not over 45 years of age..... 30 cents a month.
For a member over 45 and not over 60 ..... 45 " " "
For a member over 60 ..... 60 " " "

The Baltimore & Ohio company divides its contributors into two classes; first, those engaged in operating trains or rolling stock; second, all other employes. The two classes are graded according to salary: A, those receiving not more than $35 a month; B, those receiving more than $35 and not more than $50 a month; C, those receiving more than $50 and not more than $75 a month; D, those receiving more than $75 and not more than $100 a month; E, those receiving more than $100.

The contributions and benefits are as follows:

	A	B	C	D	E
Contributions: First class, per month	$1.00	$2.00	$3.00	$4.00	$5.00
Contributions: Second class, per month	.75	1.00	2.25	3.00	3.75
Benefits: Accidental injuries, per day (not including Sundays and legal holidays)—					
First twenty-six weeks	.50	1.00	1.50	2.00	2.50
After twenty-six weeks	.25	.50	.75	1.00	1.25
Benefits: Sickness, per day (not including first six working days, Sundays or legal holidays), for fifty-two weeks	.50	1.00	1.50	2.00	2.50
Benefits: Death from accidental injuries	$ 500	$1,000	$1,500	$2,000	$2,500
Benefits: Death from natural causes.. Ordinary	250	500	750	1,000	1,250
Maximum	1,250	1,250	1,250	1,250	1,250

A member may, if he be under fifty years of age and pass a satisfactory medical examination, enter a class higher than that determined by his earnings, provided he shall have been continuously in the service for five years, or if a member of the fund and has been so for one year and continuously in the service for five years prior to the time of application to enter the higher class.

Natural death benefits, up to the maximum amounts indicated in the table, are obtainable by members of the Baltimore & Ohio department in addition to the sums they are entitled to by reason of making the ordinary payments of the class to which they respectively belong. In order to obtain these additional death benefits the member must be under fifty years of

age, and must pass a satisfactory physical examination. For each additional two hundred and fifty dollars of death benefits, he is obliged to contribute twenty-five cents per month.

Membership in a relief department is not, as a rule, continued after an employe leaves the service, but it may continue during a furlough or suspension of a limited period (not exceeding nine months under the Pennsylvania system, and six months on the Baltimore & Ohio) providing the contributions* be paid in advance and compliance made with other regulations. Any such member failing to make his contribution for three successive calendar months under the Pennsylvania system and for one month under the Baltimore & Ohio loses his standing. The Baltimore & Ohio system allows an employe, after permanent honorable dismissal from the company's service, to keep up the death benefit feature of his membership. No refund of contribution is made upon withdrawal except a proportional amount of the unexpired part of the month in which the employe withdraws.

No benefits are payable to employes during the receipt of wages by them from the company, nor are payments made for disablement or death arising from immoralities, or injuries received while engaged in unlawful acts, etc.

* The Baltimore & Ohio requires only the payments for death benefits.

Contributions are not required from members during disablement if no wages are paid.

The railroad company has charge of the operations of the fund on the Baltimore & Ohio; guarantees the fulfillment of the obligations assumed by the department in charge; holds the funds in trust and is responsible therefor; supplies facilities for carrying on the business of the fund without charge; pays all operating expenses, including salaries of officers, medical examiners and clerical force, and allows interest on the balances in its hands. As the guarantor and trustee of the fund, it reserves the right to pass upon the securities in which the fund is invested. If in any period of three years there is a deficiency in the fund, it is made up by the company; if, on the other hand, there is a surplus for such period, it is used in the promotion of a fund for the benefit of superannuated members or in such other manner (for the sole benefit of members of the fund) as may be determined by the advisory committee, subject to the approval of the company.

The Baltimore plan, it will be noticed, contemplates no provision for the payment of sick benefits after the expiration of fifty-two weeks. However, after that time it is the custom for the company to contribute more or less to meet particular cases. There is no hard and fast rule.

In further reference to the advisory committee of the Baltimore company's relief fund, the six members thereof representing contributors were

designated by the company for the first year; thereafter they have been elected by members, each member having one vote.

The superintendent or manager of the department or fund is secretary of the committee.

The committee holds stated meetings once in three months at such time and place as it may determine, and meets at other times at the call of its chairman.

It can also be called to meet on the written request of three of its members.

For convenience the committee divides itself into two sub-committees: a supervisory committee having particular supervision over the administration of the department; an appeals committee which decides appeals from decisions of the superintendent, or manager of the relief department.

The advisory committee also directs investments and disposition of moneys not required to be kept on hand for current use, subject, however, to the approval of the company. Such investments are made in the name of the company in trust for the relief department.

In relation to the superintendent. He has charge of the business of the department; prescribes the forms, blanks and returns; certifies the bills and time rolls for employes of the department, and hires the force, including the medical examiners, necessary for conducting the department—subject to the approval of the executive officer of the company acting as chairman

of the advisory committee. The medical examiners are assigned to specified districts. Their duties are to prepare applications for membership, to see that members who are sick or injured are properly attended to; to ascertain and report upon their condition; to decide in conference with attending physicians when members are unfit for duty; also when able to return to work; to prepare claims for benefits on account of disability or death; to certify to bills for surgical treatment, and make the required physical examination of applicants for membership. They are not allowed, personally, to give medical attendance, except in emergencies.* Sick members are permitted to select their own physicians, and for members disabled by accident in the company's service, surgical attendance is furnished by the department or paid for by it. The medical examiners are young men who have had more or less practice, who combine tact and business ideas with professional knowledge†

Some of the railway companies of the United States have what is known as a "Hospital Fund," by the aid of which a hospital is maintained open

* One reason is that the duties of medical examiners do not allow time for this. They are also too remote in many instances to act with the promptness that is necessary. In many cases it is not acceptable to members to be attended by the company's doctors.

† The territory covered by each medical examiner averages (on the Baltimore & Ohio Railroad) about one hundred and fifty miles. Salaries vary from nine hundred dollars to fifteen hundred dollars per annum.

to injured employes or those in need of medical assistance. Its expenses are met from a fund subscribed by the company and from assessments upon each employe based on salary. The fund is expended in administering the affairs of the hospital under the direction of the company's chief surgeon. Both fund and hospital are under the control of the company. The necessity of this fund would disappear with the adoption of a relief fund, such as I have described.

In addition to the funds referred to in the foregoing, there is another that has some advocates among railroad men, and has in a limited way been tried. It is called the "Savings Fund" and is intended to provide employes with a safe means for husbanding a portion of their wages.* The fund is restricted wholly to the savings of employes, the employer aiding with advice and facilities and needed cash to meet operating expenses. The fund is under the supervisory direction of a manager appointed by the company.

All freight and ticket agents are made collecting agents and local depositories.

Only those in the service of the company can become members, but parents and others may make deposits in the name of a child, the deposit being subject to the order of an adult.

Minors are also allowed to deposit in their own names, subject, however, to the order of an adult.

* On the Baltimore & Ohio Railroad the savings feature is supplemented by a "loan" feature providing for advances to employes upon security and at interest.

Any employe may become a member of the saving fund or bank. Forms of application are secured from the manager or the agents at the depositories. The blank sets forth the applicant's full name, residence and occupation; also, the name and residence of the person to whom, in the event of death, his deposit, with interest, is to be paid. The application having been approved by the superintendent of the fund, he sends the applicant a deposit book in which are printed the regulations with the assent of the applicant thereto, which latter must be signed and witnessed.

Any sum, in even dollars, not exceeding one hundred dollars in any one month, may be deposited; depositors were allowed to pay in any amount they chose when the fund was first inaugurated.

The amount deposited is entered in the depositor's book when the deposit is made.

The agent who receives the money remits it to headquarters immediately. The depositor is required to notify the superintendent of each deposit, and is supplied with a ticket for that purpose. In this way a desirable safeguard is thrown around receipts.

Interest is allowed on deposits at a rate agreed upon.

Interest is computed from the first of the calendar month after the deposit amounts to five dollars, and on all subsequent deposits from the first of the calendar month after they are made.

No change is made in the rate of interest without six months' notice.

The accumulated interest is added to the principal on the first of January.

Interest is not allowed depositors who neither add to nor draw from their account, nor forward their deposit books (that interest may be entered therein) for three years.

Interest ceases when direction has been given by the company to close an account.

When an employe leaves the service his account is closed within thirty days thereafter and interest is not allowed after the expiration of that time.

A depositor is required to give ten days' notice to the superintendent of the fund if he wishes to withdraw an account. A form is supplied for this purpose. This form, with the depositor's book, must be forwarded to the superintendent by the agent receiving it, the latter giving the depositor a receipt therefor. Upon receipt of the notice, the superintendent issues an order on the treasurer of the company for the amount, which the latter must approve, after which it is sent to the depositor. It will be cashed by any agent of the company, or at the bank where the company does business, on presentation by the depositor, of his book. However, if not known, he must be identified. Orders of this nature, if not called for within fifteen days, are required to be returned by the depository agent to the superintendent,

the amount being entered on the depositor's book as a deposit on the day thus returned.

The company reserves the right to require thirty days' notice before the withdrawal of the entire amount of a deposit.

No money is paid except to the legal owners thereof and orders drawn by owners must be attested by a creditable witness.

It is provided that in the event a depositor becomes insane or incapacitated (in the absence of a legal representative) if proven to the satisfaction of the superintendent, he may disburse such proportion of the balance of the depositor as may be shown to be necessary to meet the pressing wants of the said depositor or his family, the receipt of the person designated to make the expenditure being a good and sufficient release and discharge to the superintendent.

Upon proof of the death of a depositor the money belonging to him is paid to the person designated to receive the same. Or if such person is not living, then to the heirs.

The company also reserves the right, on giving thirty days' notice, to return any deposit with accrued interest.

Deposit books are forwarded to headquarters on the last day of each year so that they may have the accrued interest entered thereon and be balanced. They are forwarded through a depository agent, who gives the depositor a receipt therefor.

No other persons than those designated are allowed to receive deposits and the company will not be responsible for moneys not deposited in accordance with the rules made and provided.*

In the event a depositor loses his book, immediate notice thereof is required to be given the superintendent, who, after a reasonable time has elapsed in which to notify all concerned, furnishes a duplicate book.†

Any adult employe of the Baltimore company, who is a member of the relief department, and has been continuously in the service for not less than one year, is allowed, under conditions prescribed, to borrow from the savings fund sums not less than one hundred dollars at a fixed rate of interest per annum, payable monthly. Every borrower, however, must carry insurance in the relief department equal to the sum loaned him, or a policy of equal amount in some regular life insurance company.

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*A list of persons with whom money may be deposited is printed by the company.

†The Pennsylvania Company has a savings fund generally similar to the one I have described. The following figures exhibit its operations from January 1, 1889, to December 31, 1896.

Balance on hand January 1, 1889	$ 364.390.66
Receipts from depositors, January 1, 1889, to December 31, 1896	3,273,605.46
Interest on deposits, January 1, 1889, to December 31, 1896	331,611.73
	$3,969,607.85
Withdrawals (paid out), January 1, 1885, to December 31, 1896	2,209,714.59
Balance, December 31, 1896	$1,759,893.26

The employe makes an application in the form prescribed, stating the amount he wants, the purpose for which it is desired, and the property offered for security. He also stipulates further that he will be bound by the regulations.

The superintendent of the fund then obtains a report on the value of the security offered. He also looks up the employe's record, and obtains such other information as is necessary to show that the applicant's case fulfills the requirements of the service. If satisfactory, the superintendent submits the case to the advisory committee, which, in its discretion, may grant the loan. The committee's decision is final.*

Before a loan is entertained the superintendent of the fund satisfies himself that the money is to be used to acquire, improve or free from debt a homestead situated within the prescribed limits; also that the loan does not exceed one-half of the market value of the security.

In making loans the superintendent gives preference to those who have the best service record, and who wish to use the money to acquire or improve a homestead. The homestead must be adjacent to the railroad or within a mile thereof, unless located in a city into which the railroad runs.

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* If loans are of frequent occurrence, frequent meetings of the advisory committee will be necessary. In the inception and inauguration of the relief department the committee must meet daily until the work is started and systematized.

If the loan is favorably cousidered, it is subject to the approval of the title by the law department of the company, the applicant being required to provide an abstract of title. Upon examination of the record and approval of the title the loan is consummated, the money being applied, directly by the superintendent, to the purposes for which the loan was granted.

Expenses attending the loan, such as cost of abstract, making and recording deeds, and a charge of five dollars for legal expenses, are borne by the borrower.

The title papers are filed with the superintendent until the loan is repaid.

It is required that loans shall be consummated within ninety days of the date they are granted, otherwise they must be reapproved by the committee.

No money is paid to the borrower. The superintendent makes the disbursements under prescribed conditions. If the loan is for constructing or repairing a building, or for improving real estate, the superintendent pays the bills after they are approved by the borrower and certified to by the inspector. No payment is made before the completion of the work or until it appears that the loan is sufficient to discharge all liens and incumbrances. If a loan is found insufficient to meet these conditions, it is canceled.*

* The Baltimore & Ohio Railroad requires that each borrower shall provide life insurance in the relief department equal to

Borrowers are required to keep the property mortgaged insured against fire. The policies are assigned to the fund. They must also pay the taxes and deliver receipts therefor to the superintendent or custodian of the title papers. If they fail to pay the taxes, the superintendent does so and charges the amount with interest, against the borrower.

The loan, together with expenses, is repaid by monthly installments into the savings fund at a rate of not less than one dollar and fifty cents for every one hundred dollars borrowed. The superintendent may, at his option, apply payments to the liquidation of expenses before crediting any part upon the principal of the loan.

To secure the monthly payments, the borrower gives an order on the company, authorizing it to deduct the amount from his first earned wages each month and place the same to his credit in the savings fund. The order is irrevocable so long as the debt continues, and has precedence over any attachment or assignment.

A borrower who has left the service is required to keep up his monthly payments.

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his indebtedness, or if under the rules he cannot obtain the necessary amount, he must get it from some life insurance company. One reason is this company advances three-fourths of the value of a property. The rules I have referred to only provide for loaning to the extent of one-half the value. Under such circumstances additional security may be waived, or only such security exacted as can be obtained from the relief department.

In the event of default (in any case) the whole amount becomes due and steps may be taken to realize upon the security.

The pension plan of the Baltimore & Ohio company forms a part of the relief department and is derived wholly from the contributions of the company, amounting to twenty-five thousand dollars annually.* It is used for the following purposes, in the order named: First, to provide means of support during life for employes who have been members of the relief department for four consecutive years, who have served the company ten consecutive years, and, having reached sixty-five years of age, have been honorably relieved from duty; second, to provide in the same manner for similar persons who elect to retire from the service; third, if there is a surplus above the amount required to comply with the foregoing, it is used to aid or support such class or classes of the company's employes who contribute to the sickness, accident or death fund as may be thought most deserving and in need of help.

No member can draw wages and a pension at the same time. Pensions are paid monthly. Every pensioner receives a daily allowance (excluding Sundays) equal to one-half the benefits provided to be paid for disability through sickness. But when a pensioner has contributed continuously for fifteen years, five per cent.

* This fund, like that for savings, may be incorporated in the sick, accident and death department.

addition is made and a like addition for each additional term of five years' consecutive service.*

The company reserves the right to at any time make a reduction of pensions or further limit the classes of persons who may become pensioners.

The statement of a member's age, as set forth in his application to the relief department, is accepted by the pension bureau as conclusive.

Members are considered to be in the service during the time they are disabled and receive benefits in consequence thereof.

If a pensioner fails to claim his benefits for two years it is considered presumptive evidence that his pension has terminated by reason of his death and his name is stricken from the list of pensioners, subject, however, to the right of restoration on a new application and satisfactory explanations being made to the superintendent.

Upon the death of a pensioner, the money that has accrued is not a part of his estate or liable, in any way, for the payment of his debts, but inures to the benefit of his widow or children. If no widow or child survive him, payment is made under direction of the courts only, except in the case of burial expenses, which are paid out of the fund. No transfer, sale, assignment

* The payments are stated in the following table:

Class.	10-year members.	15-year members.	20-year members.
A.	$0.25 per day.	$0.26¼ per day.	$0.37½ per day.
B.	.50 " "	.52½ " "	.55 " "
C.	.75 " "	.78¾ " "	.82½ " "
D.	1.00 " "	1.05 " "	1.10 " "
L.	1 [illegible] " "	1.31¼ " "	1.37½ " "

or pledge of a pension is valid, but amounts due to persons embarrassed by legal difficulties may be arranged by the superintendent. No pension can be seized or attached.

It should be mentioned, in concluding what I have to say in regard to practices in the United States, that many American companies systematically aid employes in the collection, installation and care of free libraries. The Baltimore & Ohio company was, however, the pioneer in this direction, as it has been in so many other benevolent projects. In connection with the library of the Baltimore company, catalogue cards are provided for making requisitions for books. These cards are widely distributed so that an employe on any part of the line may make a requisition for books and receive them by baggage car. Another feature is that those in charge of the library undertake to procure for employes of the company such things as stationery, school, text and other books at cost price, giving buyers the benefit of the discount their knowledge and large purchases enable them to effect.

Many instances other than those I have enumerated might be mentioned of substantial contributions made by the railway companies of America for the purpose of ameliorating the condition of their employes. In case of accident, whether the company is in fault or not,

the employe, as a rule, receives medical treatment and medicines without charge therefor. In the great bulk of cases he also receives an allowance equal to a portion of his regular wages. The sums thus expended where no liability exists on the part of the railway company are very great, and while they may not in every case be equal to the systematic contributions of the European companies, they are very large and evince intelligent and appreciative interest in the employe. It will never do, in any case, to assume that because an American company has not made specific provision for relief funds in which it and the employe co-operate as subscribers, that no provision for the employe will be made in the event sickness or accident overtake him. Something will be done in every case, we may be assured, but just what it will be, or to what extent it will go, depends on circumstances. It is this uncertainty that makes the voluntary aid of carriers less satisfactory than that of the organized relief fund. The latter can not only be confidently counted upon by the employe, but it is swollen by the contributions that he has been led to make in the day of his prosperity. The bounty of the company is thus supplemented by the providence of the employe, a providence that it is quite likely he would never have been led to make except for the suggestion and co-operation of his employer.

CHAPTER II.

PROVISIONS IN OTHER COUNTRIES.—GREAT BRITAIN.

The government of Great Britain not only undertakes to protect its servants in their places and promote them when opportunity offers, provided they are capable and trustworthy, but it agrees to make provision for them when they are broken down or too old to work. This provision takes the shape of a pension. All the great governments of Europe likewise pension those who have served them faithfully. This is right, and let us hope the practice will soon be generally followed in the United States. However, the beneficent provision in question, is not restricted to governments. The great nobles and landed gentry of England do the same. It is as noticeable, as it is commendable, that the rich of Great Britain, almost as one man, heartily and gracefully accept the obligations of their position. They recognize that their wealth and position carry with them the duty of looking after those less fortunate. This may not have been so in every age, but it is so to-day. The result is that those who live upon the great estates of nobles, or who are in any way identified with them, as attendants, tenants or otherwise, are looked after, not perfunctorily nor grudgingly, but with the

kindliness with which the parent looks after the child. This is the obligation of social position and wealth intelligently regarded.

In a similar way the railway corporations of Great Britain recognize not only that they must protect faithful and competent employes in their positions and promote them when they can, but aid in making provision for them when they are no longer able to work or have been a specified number of years in the service. The corporations do not undertake to do this alone, but in conjunction with those benefited. The former starts the machinery, contributes its share of the money and does everything it can to help the employe who is trying to help himself. Here, as in everything else, the prudence, executive talent, orderly character and benevolent disposition of the Englishman shows itself. I cannot attempt to enumerate all the railroads that thus make provision for pensioning their employes. Every railroad company in Great Britain may be said to have taken measures of this kind. The extent of their aid is controlled naturally by the extent of the property and the nature of its resources. I will limit my description to an account of one company, namely, the London and Northwestern, —one of the greatest corporations in the world. This company has two funds, one for the benefit of salaried officers and clerks, and one for other employes. The first is called a "Superannuation fund association." It has been in existence since 1853. Its object is to provide each contributing

member with an allowance on his retirement from the service at the age of sixty years (or at an earlier period should his health fail), provided he has been at the time of his retirement a paying member for ten years. Provision is made for those dependent upon him in the event of death before superannuation. Membership is compulsory, but no person is permitted to become a member after the age of twenty-six years. The contributions of members amount to two and a half per cent. of their salaries. It is deducted monthly from their pay. The company contributes an amount equal to that of the members. The fund is held in trust by the railway company. It allows the same rate of interest thereon that it pays on its debenture bonds and mortgages. A committee administers the fund, three members being nominated by the company and three by contributors.

In the event of the death of a member before superannuation, his representatives receive either the equivalent of half a year's average salary (calculated over the whole term of his contribution) or the sum of his own contributions and those of the company in his behalf, whichever is the greater. Any member retiring of his own accord from the company's service before superannuation, receives back one-half the amount of his own contributions to the fund. A member whose engagement is terminated by the company from any cause other than fraud or dishonesty receives back the whole of his contributions. If

he is dismissed for dishonesty, he may, in the discretion of the committee, forfeit the whole.

Pensions are as follows: Twenty-five per cent. of average salary for ten years of contribution; twenty-six per cent. of average salary for eleven years of contribution; twenty-seven per cent. of average salary for twelve years of contribution, and so on.

The fund at the time I investigated it amounted to two million, five hundred thousand dollars. It had six thousand members, and its annual revenue was in the neighborhood of two hundred and fifty thousand dollars. Actuaries investigate the operation of the fund from time to time and revise the rates, if necessary.

There is another pension fund for the benefit of the "Wages Staff," i. e., employes paid by the week, such as engineers, conductors, brakemen and switchmen. It is amalgamated with the insurance bureau of the company, and has two classes of members, first and second; an employe may join either. First class members pay four cents a week and secure a pension on retirement of two dollars and fifty cents a week. Second class members pay two cents a week and get a pension of one dollar and seventy-five cents a week. The company contributes something like twenty-five thousand dollars per annum to the fund and limits its contribution to thirty thousand dollars annually. Members become pensioners at the age of sixty-five and must have contributed to the fund not less than twenty years.

The provision on different railroads in Great Britain for providing for employes is not alike, but all look to the care of employes when disabled or no longer fit for work.

FRANCE.

Arrangements for pensioning employes of railroads are common on the continent. Such provision is made by all the companies of France, and a description of one indicates the scope of all.

The pension fund of a French company embraces all its permanent employes. It is made up of premiums paid by them, amounting to four per cent. of their salaries, which the company deducts. The contributions of the railway company equal six per cent. of the wages paid. Accretions from interest are also added to the fund.

Before being entitled to become a pensioner, an employe must have attained the age of fifty-five years and have been a member of the fund for twenty-five years.

The company has the right to pension any employe fifty-five years of age or over, and also any employe who has been in the fund for fifteen years and has become incapacitated by reason of accident, sickness or infirmity contracted in the service.

The amount of pension paid is calculated at the rate of one and a half or two per cent. of the average wages received by the beneficiary for the six years preceding his retirement, or upon the

total of wages he has received during his membership in the fund, whichever is most advantageous to him.

No pension may, however, exceed two thousand four hundred dollars per annum.

If a pensioner dies, one-half of his pension reverts to his widow, if the marriage was contracted not less than five years previous to his retirement.

By the death of a female pensioner, however, her pension does not revert to her husband.

If an employe dies after fifteen years membership, whatever his age, his widow receives one-half his pension, if the marriage was contracted not less than two years previous to his death.*

If a pensioner or member of the fund leaves no widow competent to inherit half of his pension, his legitimate children under the age of eighteen are entitled to it, divided among them equally and expiring when they attain eighteen years of age.

If an employe dies leaving a widow, and his widow receives her one-half pension and dies leaving children under the age of eighteen, the same disposition is made of the widow's pension in the case of the children.

If a pensioner dies leaving children by a former wife, they are entitled to half the amount otherwise payable to the widow, or if only one child, it is entitled to one-fourth the amount, until

* Women who have separated from their husbands are debarred.

eighteen years of age. If the widow is living when the children attain eighteen, their pension reverts to the widow.

A widow is not entitled to receive more than one pension unless she herself has been an employe; if, through successive marriages to employes, more than one pension should revert to a widow, she is entitled only to receive the largest to the exclusion of the others.

The company refunds to employes leaving the service, before becoming entitled to a pension, the full amount paid in by them without interest. If the employe dies, the refund is made to his heirs.

The pension fund is managed at the expense of the railway company by a commission of five members chosen annually from the directors of the company. The decisions of this commission are final. It decides as to the investment of the funds. The fund is held in trust by the company. It makes a financial statement annually to the board of directors, which statement, after approval by the board of directors, is printed and distributed to contributors.

The railway company guarantees the payment of pensions, and if the fund is insufficient makes up the deficit. It reserves to itself the right to revise rates of premium or modify the system, but its alterations may not be retroactive as regards the acquired rights of contributors, and can only apply to future members. The admir-

able steps taken by French railways, looking to the social betterment of employes in every circumstance of their lives (both while in the service and afterward), cannot be described better than by quoting from an address by the manager of a great French line on the subject.* He says: "The first duty of employes toward themselves and their families, even more than toward their employer, is to save, and avoid strikes. Insurrection, it has been said, is sometimes the most sacred of duties; on political grounds, and against tyrants, it may be; but in the domain of industry, where tyranny on the one side, if it exists, is counterbalanced by liberty on the other, it is a most disastrous means to those having recourse to it. To prevent strikes, an employer truly worthy of the name must devote his attention, above all things—above the perfection of his commercial methods—to the study of his duties towards those he employs. It is in effect the best policy, a business having no lasting prosperity except under conditions that insure a harmonious understanding between capital and labor. If, through insufficient education and natural desire to better themselves, workingmen do not know their true interests, it is the duty of the employer to guide them, to devote himself to their material and moral interests. This is, at the same time, an easier and a

* G. Noblemaire, Director General, Paris, Lyons & Mediterranean Railway. Address delivered at the opening session of the Congress of the Society of Social Economy and Unions, at Paris, France, May 16th, 1890.

harder task for a small employer than a large one; easier because, having a small business, he is himself in daily contact with all his force, knows all his employes and lives with them in a sort of family way; harder because, owing to his comparatively small capital and the instability of his business, which does not allow him to look very far ahead, he cannot guarantee his employes work for an unlimited period of time, when he himself is not sure of it. Neither can he provide for their future, when old age and toil have rendered them unable to work longer. Entirely different is the position of large industries like a railway, chartered either perpetually or for a long period and sure, if prudently managed, of a life long enough to use up several generations of men. It is of these industries that I speak. The railways of France have never hesitated, to their honor be it said, to make sacrifices; to assume a burden which, under a feeling more commercial and selfish, they would not have imposed upon themselves. The present material existence of their employes has seemed to them something; but to look after their future interests and their moral requirements they have considered one of their most imperative obligations. Their actual, material wants is only a question of wages which will adjust itself to the natural law of supply and demand. Almost everywhere, owing to the fact that railways have shortened distances and facilitated exchanges, habits and wants, if not resources, have evened themselves

up in our provinces. Almost everywhere what was sufficient before is not sufficient now, and the requirements of comfort, relatively speaking, have increased more rapidly than the price of food and clothing has decreased. Almost everywhere, consequently, wages have increased. Against the irresistible progression of this element, so important in our expenses, coincident with the decrease in the profit per unit of transportation [the rate per passenger or per ton per mile], railway companies must provide, by seeking means for replacing, so far as possible, the work of men by the work of machinery, without preventing the actual number of employes from increasing; and by affording them, aside from their wages, indirect means of ameliorating their condition, by giving work to their wives and children and lowering the price of rent, food and clothing. I will, with your permission, examine these different methods. The normal place of woman is certainly in the family circle—at the head of the household. Yet in large families it is the duty of each to increase, if possible, the common resources. It is for this reason that the companies have tried to increase the field for women's work within the limit of their strength or education by taking into our workshops and offices the parents of employes, who are not necessary at home. In this way we have increased the resources of the family, and, under certain restrictions which it is not necessary to discuss here, have secured an excellent service. We

have all of us studied the question of improving the condition of small salaried employes, by aiding workmen in acquiring homes, purchasing the stores they need, and otherwise aiding co-operative societies among them. In regard to these institutions in connection with railway companies I will make a few observations. There is no one who would not follow with great interest the efforts of good men to remove workingmen from the pernicious influences of certain quarters of great cities; to place at their disposal outside these baleful influences, in the country, in some cases, healthy and well constructed houses where body and brain may acquire strength instead of losing it, in the frequentation of low groggeries. The French railway companies promote this movement by offering their workmen who are wise enough to live outside of great cities, tickets at a price within the means of the smallest salaried employe. The companies have sometimes built houses when necessity compelled them to bring together a certain number of employes, either in a village lacking sufficient accommodations or, *a fortiori*, away from inhabited centers. It is needless to say that they do not look for a profit in such cases, but are satisfied if they get two per cent. or three per cent. on the money invested; and especially when the houses are built through private enterprise, which the natural independence of employes makes them prefer. The low rent of the company's houses is a perpetual bar

against the unfair exactions of landlords. With cheap rent for our employes assured, either in our houses or elsewhere, our end has been attained and our sacrifice justified. Under these conditions we could not adopt the plan of the ordinary builders of workmen's houses, of giving the lessees the privilege of buying them. Moreover, as our men often change their residence on account of the requirements of the service, it would cause inconvenience in many cases if they owned their homes. Furthermore, these houses, built for the use of employes in active service, could not be advantageously disposed of, either to a stranger or to an employe who, from the day of his retirement, becomes a stranger to us, so far as the service is concerned, and who would occupy a place necessary to an employe in the service. If these conditions are true in regard to houses built outside of our own grounds, in the country, they are more so in the case of houses built on the company's ground. In certain cases, however, where the company has vacant land not required for its own purposes, it may be to its interest to build, either directly, or indirectly through some society, plain houses to be rented to workingmen, its own employes being given preference, if not the exclusive right of occupying them. However, a company undertaking this acts less as a railway company than as a common landlord, and for this reason I merely mention it. Of the measures adopted by which the necessaries of life are bought at wholesale

and sold to employes at cost price, I am not a strong advocate. They are excellent—and, indeed, necessary—in certain cases, namely, in the operation of lines running through large territories, thinly settled or uninhabited. I have established them in Spain and Algeria. I have not, however, felt it my duty to follow the example of several of the large companies, and establish them in France. We certainly were not deterred from doing so by the unavoidable annoyance and expense connected with their establishment, but it is in the nature of things that employes should not have faith in the disinterestedness of a company, should believe, or claim to believe, that they were being defrauded by it. However, when one is sure of one's own sentiments, and does good for the sake of doing good, he should not mind the talk of the ignorant or the slanders of the wicked. It has seemed to us that in a country where provisions of all kinds can be easily obtained everywhere, it was not within the province of the railway company to substitute its action for the individual action of its employes. We have sometimes been compelled to start eating houses in large working centers where our shops were too far from the residence district, but no matter how low the price charged our workmen for their meals or for the provisions we allowed them to take home to their families, we have not always succeeded in making them popular. As a matter of fact, however, the opening of these eating houses has

had the effect of greatly lowering the prices charged by restaurants and boarding houses in the neighborhood, and in this way our object has been gained. Instead of buying supplies or increasing the number of eating houses, it has seemed better to us to encourage by every means in our power the establishment of co-operative associations, which will enable employes to obtain their supplies under especially favorable conditions owing to the large amount they purchase. This may be done in two ways—by the formation of co-operative societies, properly speaking, or by informal arrangements between employes. The co-operative societies, buying cheaply, and selling a little higher to their members (all employes of the company, of course), but still much cheaper than the current prices in their districts, necessarily realize a certain profit, which is distributed annually among members, being prorated on the basis of the amount each has purchased. Such institutions, aside from their material results, stimulate individual effort and teach employes to depend upon themselves. It is a practical application of the wise precept, 'God helps those who help themselves.' Railway companies may very properly aid these associations, either by their advice or by subsidies in the shape of reductions in the rate charged for the transportation of their supplies. But societies require management, accounting and time, and the last is often limited. Errors and accidents may happen. To avoid the difficulties I have

referred to the employes of one or more districts may, without subjecting themselves to the trouble of forming co-operative societies, group themselves into informal associations, the heads of which will have no duties to perform other than to find out and make known to their associates the cheaper prices that certain dealers are willing to make for the necessaries of life, to be delivered at depots and to be paid for directly by the purchaser. An association of this kind has been started in Lyons and now includes twelve thousand members, dealing with two hundred and fifty purveyors. It is a simpler system than the first described in its formation, but more intricate in its accounting, and consequently of less material benefit. From a moral standpoint it promotes individual enterprise, but inasmuch as no profit accrues, such associations are not susceptible of being turned into provident associations, as the co-operative societies may be, by investing the profits in the name of the members instead of distributing them yearly. Consequently such associations are less worthy of being encouraged by the employers. This encouragement is the first example of moral assistance that the employer gives his employe. Another is the establishment of benefit funds for the relief of employes in case of sickness or accident; in some cases there are no such funds. In such cases the company undertakes to provide medical attendance, etc., for its small salaried employes, and also allows them half

pay for a longer or shorter period. In the case of employes injured in the service full pay is allowed. On some roads there is a benefit fund, made up partly from contributions by the company and partly by premiums deducted from the wages of employes. Experience seems to have demonstrated that a premium of three or four per cent. of the wages is sufficient to meet average contingencies. This system seems, to the companies which have adopted it, better than the former—not certainly for the reason that it costs them a little less, but because it is more conducive to habits of foresight and saving—a saving that does not belong to the one who makes it, who may, in fact, never profit by it unless he falls sick. This is a community of gain and loss (solidarity), of which everyone will approve. It is not, properly speaking, foresight. Very different in character are the institutions (worthy of the greatest encouragement) known as mutual benefit associations, made up exclusively of voluntary contributors, and consequently managed exclusively by employes. There is one in Lyons which includes thirty-three thousand members, pays out nineteen thousand dollars in pensions, and has a reserve amounting to six hundred thousand dollars. Such institutions may be dangerous in that, through inexperience, they may try to do too much; may find it impossible, notwithstanding the apparent magnitude of their revenues, to carry out the engagements they have too gener-

ously assumed. If they would confine themselves to cases of sickness nothing would be more simple. The experience, already extended, of a large number of railways, furnishes sufficient evidence in this respect; they go so far as to undertake the payment of pensions, sometimes not well specified, based upon a fixed revenue. Under such conditions the question becomes different. Pension funds established by railway companies have already met with several mishaps and in order to repair them such companies have on several occasions been compelled to increase their contributions. In any event the companies have undertaken to make up the deficits out of their own revenue. With smaller premiums and no eventual resources, it is to be feared that institutions, more generously started than strongly established, may meet with serious mishaps. The greatest service therefore that can be rendered their founders is to advise them not to go too far; to confine themselves to cases of sickness, in order not to endanger institutions founded on the noblest of sentiments, that of solidarity, and on principles most commendable—mutual and individual enterprise. You will not expect me, gentlemen, to speak at length on another duty of a moral character which devolves upon the employer—namely, that of providing for the children of his employes ordinary or professional education. As for ordinary instruction, schools have been so widely disseminated by the state over the entire territory of France, that it has only been

in exceptional cases that railway companies have had to subsidize private schools or establish them for the exclusive benefit of the children of their employes. As for professional instruction, it is different. Outside of great cities where are found commercial schools there are very few resources. If for the service on trains and at stations we may admit that the best school is the service itself, we must for our technical service supply the deficiencies of ordinary instruction. All the companies have considered it necessary to establish in the vicinity of their larger shops (if away from great cities) professional schools maintained exclusively for the children of their employes, in which, in addition to technical education, they learn, under the eyes of their parents, the trade that is to be their means of livelihood. It is good policy for a company to provide this method of recruiting its service. It is especially a good moral practice, as it keeps families together and allows the father to oversee the education of his children and initiate them into his trade, which, making such trades hereditary, so to speak, tends to give our service a family character, notwithstanding its size and the extent of territory it covers. I will mention in passing other institutions of a patronal or charitable character. And first there are the kindergartens, where employes' children, whose mothers go out to work in order to increase the resources of their family, may be left and cared for; and second, the orphan asylums, where

the company maintains, at its own expense, the children of employes who have been deprived of one or both parents, but who are not entitled to the assistance that in certain cases the pension fund grants. The first assist the family; the second supply the place of the family so far as possible. In both these institutions the children receive a primary education and learn a trade which will enable them to earn their own living. I come now to the last expression of benevolence the most important of all, on the part of railway employers. I mean the pension fund. Such funds have been established by all the railway companies. There are forty thousand members of our fund and eight thousand pensioners, who are paid one million three hundred and forty thousand dollars annually. The provisions of this fund are, I believe, the most complete that have been so far put in operation. It is not necessary for new companies to undertake so much at first. In fact, we ourselves have only come to it gradually. But it is most important that private companies, especially those of recent formation, should make such provision as to insure their engagements being fulfilled until the death of all interested. Before closing, I wish to speak of something which has not yet been attempted, but which, in my opinion, ought to be. Our pensioners, if they have families, or if they still have relations or friends in their native places, can, by going back there, live modestly on their pensions. But those of them who have

neither home nor friends are more embarrassed; and although their expenses are small it is difficult for them to live among strangers. For such as these, at first, and for old couples later on, if resources permitted, I think it would be of great benefit to build a home where homeless pensioners can find at least good board and lodging. Their lives would be simple, their pleasures few, One of the greatest of the latter would be to talk over their old campaigns and make fun of their old chiefs. This pleasure would be human and harmless. This new evidence of interest in the the welfare of old servants would certainly establish a new tie between the company and its employes in actual service. I will not deny the difficulty of securing to these new institutions the resources necessary to supplement those, necessarily insufficient, which would be furnished by the pensioners surrendering a part or the whole of their annuities. But where would be the merit of doing good if one could do it easily, without trouble or sacrifice? On our Mediterranean coast in that blessed region where life is easy and sweet, I know a certain spot, washed by the waves of the azure sea, where the soil produces almost without effort, where the flowers grow without culture, in the shade of the olive and palm, where it would be sweet to rest from the labors of a busy life and meditate upon the events of one's past career. It is there that I would install those of our old associates who find themselves alone at the close of life. Is it a

dream? I know not. But if it were given to be realized by one to whom your science, gentlemen, gives the name of 'patron,' almost *pater* [father], what grander crowning could there be to a life of labor, inspired by love of, and search for, the good?" The thought that the French companies have given to the amelioration of the condition of their employes lives, as indicated by M. Noblemaire, is at once a revelation and a surprise to those living in new countries where time has not permitted giving these subjects much attention.

GERMANY.

In Germany, where the great bulk of the railroads are owned and operated by the state, provision for the relief of railroad employes is regulated by law. Supplementary funds, in some cases aided by employes, afford incidental relief.

The law governing cases of sickness and death provides for medical treatment and medicines, and in case of death, for burial. Also a specified allowance for sick employes whose salaries do not exceed five hundred dollars per annum.

The sick benefit begins the third day of illness and covers a period of thirteen weeks; except in severe or sudden cases the benefit may begin from the first day of the illness. One half the means are provided by employes and one half by employers.

In addition to the sick benefit covered by the general law the railways provide (for districts

designated) a special fund, under which the sick benefit can be extended to families of employes. Also (according to the condition of the fund), the period over which the benefit is operative is often extended beyond the thirteen weeks provided by the law, to six months, and in many instances to one year.

Employes earning over five hundred dollars per annum can join this fund voluntarily.

The accident insurance law secures to employes whose income is less than five hundred dollars per annum, in case of accident while in discharge of their duty, payment of the cost of cure and a continuous income which, in case of total disability, reaches sixty-six and two-thirds per cent. of the regular income, and a regulated income in case of partial disability. The income under the law begins with the fourteenth week; up to that time the sick benefit is supposed to provide for such cases. If the accident results in death the family of the deceased receives the cost of burial and a certain income.

Accident insurance in Germany is established by a union of employers covering a certain calling, without expense to the employes. The cost of maintaining it and providing for payments under it is apportioned yearly among employers according to the requirements of the year. The private German railways have established among themselves such an accident insurance company. In this employes receiving more than five hundred dollars per annum also participate.

Finally, in relation to the pension law covering total disabity in the performance of duty, or on account of old age, provided for employes and laborers generally whose salary does not exceed five hundred dollars per year; this law became effective January 1, 1891, and is very intricate. It allows a pension in case of total disability not resulting from accident, and for old age on completion of the employe's seventieth year, even if such employe is still able to work. Means are provided, in addition to those contributed by the government, one-half by employers and one-half by employes. No provision is made for the families of employes.

There are a number of insurance associations ordained by law, but to only a few of the larger government railways has the privilege been granted of establishing independent insurance societies. Companies operating independent insurance societies are required to comply with certain provisions of the general law by which means they participate, to an extent, in the bounty set aside by the goverment.

ITALY.

In Italy a uniform system has been adopted on the great railway systems of that country for assisting and pensioning employes. They have two funds—a pension fund and an assistance fund. All permanent employes, except laborers, belong to the pension fund; all laborers belong to the assistance fund.

In reference to the pension fund, assessments are levied upon employes as follows; Three per cent. of their regular salaries, including any allowance for board, traveling expenses, etc.; one-twelfth of any increase in salaries; one and one-half per cent. of any irregular or extraordinary compensation received by employes (gratuities, etc.); one-tenth of the salary received for the first year of membership.

The railway company contributes an amount equal to one and two-thirds of the three per cent. assessment of employes and an amount equal to the one-twelfth contributed by employes for increase in salaries.

The pension fund also has an important source of revenue in the sale of admission tickets to depots.

The annual pension is equal to nine-tenths of the sum of the (ordinary) assessments, with a maximum of nine-tenths of the salary for the last year. The maximum pension is one thousand, eight hundred dollars; the minimum, sixty dollars.

Widows, with or without children under age (twenty-one years), receive, respectively, three-fourths or three-fifths of the employe's pension.

Orphans under age, if there are two or more, receive one-half the pension; if only one, one-fourth.

In case of disability a member is entitled to a pension after having been ten years in the service.

An employe is entitled to a pension after reaching the age of fifty years, and after having served twenty years, or when he has reached the age of fifty-five years and has served twenty-five years, according to the nature of the work he has been employed at, i. e., whether active or sedentary.

The family of an employe (widow, children under age, or orphans) is entitled to a pension, if the marriage has been in force one year or over, provided such marriage was not contracted after the employe reached the age of fifty-five.

However, in case an employe has not fulfilled the conditions necessary to entitle him to a pension, or his family to the reversion of a pension, a fixed sum is given in final settlement.

In case a pension is given an employe who is dismissed for the good of the service, after having been assessed for less than twenty-five years, the pension reverting to his family is based on the same amount as if he had been assessed for twenty-five years.

In reference to the assistance fund of the Italian companies referred to, members are assessed an amount equal to three per cent. of their salaries. The company contributes a like sum. In addition to this, the fund has two important sources of revenue, namely, fines assessed against employes, whether commissioned or otherwise; also, all unrefunded overcharges.

The fund pays for the care of the sick or injured, the doctor's fees, medicines, surgical apparatus, etc. In case of death indemnity is paid.

In addition to the foregoing, assistance is given as follows: A. To the sick or injured, an amount equal to two-thirds of their salary. If the injury is incurred in the service, full wages may be paid. B. A pension, in the event an employe is disabled after having been fifteen years in the service. In the event an employe is permanently disabled before having been fifteen years in the service, a specified sum is allowed him. The pension is equal to one and one-half per cent. of the average salary for the last three years, multiplied by the number of years in the service, with a minimum of sixteen cents per day and a maximum of fifty cents per day. The allowance, as provided above, equals one-twentieth of the average yearly salary, multiplied by the number of years in the service. The pension or allowance may be increased by one-fourth in the cases covered by section A. C. In case an employe dies in the service his family (widow, children under eighteen years of age, or father or mother if dependent upon him for support) receives the above pension. In the event of his death while in receipt of a pension his family receives the same allowance, less the amount of pension already paid him, with a minimum of one-third of his annuity.

INDIA.

Benefit funds for railway employes have been fully and intelligently provided for in India. Prior to 1880, employes of superior grade in the service of the state railroads received pensions in

common with other government employes. Following this period all employes were required compulsorily to subscribe a certain percentage of their salary to the State Railway Savings Bank and Provident Institution. The railway companies added to these deposits a bonus equal to one-half such deposits and in addition a stated amount of their net profits. Thus each employe practically became a profit sharer with the owners of the railroads.

In the operation of the fund a savings bank is established in the office of every railway manager: the manager is the secretary. He makes the deductions from the wages of the employe and deposits them on behalf of the employe, as follows: from each fifty cents of the wages of every married employe or widower with children dependent upon him, not being of purely Asiatic descent, and of any other servant who may in writing desire, three cents; from each fifty cents of the salary of every other person one and one-half cents.

At the expiration of each half year the accounts of the employe are credited with a bonus equal to one-half the compulsory deposits thus made. In addition to this one-half of one per cent. of the net earnings of the road is half yearly set aside as a further bonus in the proportion of the compulsory deposits of employes during such half year; the aggregate bonus thus granted may never, however, exceed the compulsory deposits for the same period.

Employes are allowed to make voluntary deposits in addition to those described which deposits they can withdraw at pleasure and upon which interest is allowed.

As regards compulsory deposits and the accretions thereon, they or any part of them cannot be withdrawn except in the event of the death of the depositor, his leaving the service, by permission of the manager, who may allow a portion to be withdrawn temporarily to permit of the depositor proceeding to or returning from Europe, or to pay for the passage of a member of his family under like circumstances, or on account of sickness, or by the depositor ceasing to be a railway employe by transfer to other government service if the balance to his credit is less than ten rupees.

When a depositor is allowed to make a temporary withdrawal, one-twentieth part thereof is deducted from his wages monthly until the amount has been refunded. When a deposit account is opened, the depositor gives the manager a certificate giving the name and address of his next of kin or the person to whom he bequeathes the whole or any portion of his deposit. This certificate he is required to renew annually, and it is recorded in the manager's office. If a contributor to the benefit fund is dismissed from the service, the bonus and interest may be withheld from him, or if he is in debt to the company, or has defaulted, the amount thereof may be withheld.

Such, in brief, is the general and particular scope contemplated by railways and governments for the benefit of railroad employes and their families in cases of accident, sickness, destitution, old age, and death abroad. The list I have given might be greatly lengthened. I have sought rather to indicate the scope of provision than its history and extent in all the country where action in this direction had been taken. In many parts of the world no attention whatever has been given the subject. In others it is only beginning to excite attention. That it is destined to grow in importance as it is more fully understood is generally believed.

APPENDIXES.

APPENDIX A.

CLASSIFIED SCHEDULE OF THE STANDARD ACCOUNTS AND STATISTICS OF RAILROADS.

Statistics of railroads are presented in two forms: those giving aggregates and those giving details. Thus in the general balance sheet aggregates are given, such as total cost of locomotives, right of way, sidings, bridges and trestles, and so on. This is accompanied in the published returns or in statements for managers, by details giving the items that make up the aggregates, so that while the summary shows only the total outlay for rails, for instance, subsidiary tables give the different kinds of rails, when laid, pattern, weight, cost, etc. This is true in regard to ties, bridges, buildings, equipment and many other things that enter into the operation of railroads.

Statistics of railroads are like a fan; they may be closed up very compactly or spread widely apart. There is no attempt to embrace here more than the roots; the statistical structure. There is no end to the collateral information that may be given, and that in many cases may be necessary.

CAPITAL AND COST OF PROPERTY.

CAPITAL STOCK:

Number of shares of various kinds and par value thereof.

FUNDED DEBT:

Par value of the various funded mortgages and trust obligations outstanding.

COST OF PROPERTY:

Substructure.
Bridges and trestles.
Buildings and fixtures.
Machinery and tools.
Rails.
Ties.
Other superstructure.
Fencing.
Right of way.
Miscellaneous charges.
Discount (or premium) on securities. (Many other accounts are suggested by the experience of different properties.)

COST OF EQUIPMENT:

Number and cost of locomotives.
Number and cost of cars—each kind being specified separately.

MILEAGE OF ROAD.

Mileage of line operated.
Mileage of second and other additional main tracks operated.
Mileage of sidings and spur tracks.

SINKING AND TRUST FUND ACCOUNTS.

Amount of each sinking or trust fund account.

OPERATIONS OF THE ROAD.

EARNINGS:

Passenger.
Freight.
Express.
Mail.
Miscellaneous. (For purposes of management it may be found desirable to divide the earnings—it can only be done approximately—between the operating divisions of a road so as to show the estimated earnings of each.)

INCOME FROM OTHER SOURCES:

Interest on bonds owned.
Dividends on stocks owned.
Miscellaneous receipts not included in earnings.

OPERATING EXPENSES BY CLASSES:

The Standard classification of operating expenses embraces fifty-three headings. See chapter devoted to this subject in Volume IX, "Fiscal Affairs. Disbursements."
(It is oftentime found desirable to apportion expenses to the various operating divisions of a road as nearly as possible —it can only be done approximately—so as to show relatively the estimated cost of working same.)

OTHER CHARGES AGAINST INCOME:

Interest on funded debt.
Interest on other debt.
Rental of leased roads.
Taxes.
Dividends on stock.
Other charges, if any, to be specified by name.

REVENUE AND EXPENSES PER MILE OF ROAD.

Average gross earnings per mile of road operated.
Average operating expenses per mile of road operated.
Average taxes per mile of road operated.

Average net earnings per mile of road operated.
Average interest, rentals and other charges per mile of road operated.
Average net income per mile of road operated.
Average amount of dividends per mile of road operated.

PASSENGER TRAFFIC:

Number of passengers carried.
Number of passengers carried one mile.
Average earnings per passenger carried.
Average earnings per passenger per mile.
Number of passengers of the different classes forwarded from each station, the earnings therefrom and the total miles traveled.*
Number of passengers of the different classes received at each station, the earnings therefrom and the total miles traveled.*

FREIGHT TRAFFIC:

Number of tons freight carried.
Number of tons of freight carried one mile.
Average earnings per ton carried.
Average earnings per ton per mile.
Tonnage of commodities forwarded from each station, the earnings therefrom and the total distance hauled.*
Tonnage of commodities received at each station, the earnings therefrom and the total distance hauled.*

LOCOMOTIVES:

Miles run by locomotives in each class of service.
Total cost of locomotive service.
Cost and quantity of fuel used.
Cost and quantity of other supplies used on locomotives.
Average cost per mile run by each locomotive for supplies and repairs.
Average miles run by locomotives per ton of coal or cord of wood, also per pint of oil and pound of waste.
(Similar statistics are possible for cars.)

TRAINS:

Number of trains run of each class.
Number of miles run by trains of each class.
Number of loaded and empty cars hauled of each class, in each direction.
Number of miles run by loaded and empty cars of each class, in each direction.

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* The great expense of giving the earnings on different kinds of passengers and freight and the slight value attached to such information by practical men, has prevented the general introduction of statistics of this kind.

Average miles run per train in each class of service.
Average number of loaded and empty cars hauled per train per mile run in each class of service.
Average number of passengers or tons of freight carried per train per mile run.
Average number of passengers carried per passenger car per mile run.
Average number of tons of freight carried per loaded car per mile run.
Average earnings per train mile for each class of trains.

[NOTE.—The considerable cost attending the separation of loaded and empty vehicles has prevented railroads voluntarily adopting such statistics.]

MAINTENANCE OF PROPERTY.

Number of tons of steel and iron rails laid separately in renewals and value of same.
Number of tons of steel and iron rails separately taken up in replacements and the value of same.
Number and value of each kind of ties laid in renewals.
Quantities and values of the various kinds of materials used, and amount of labor expended for maintenance except where the structure, bridge, car, locomotive, etc., is purchased outright in the market.
Cost of renewals and repairs of roadway and track.
Cost of renewals and repairs of bridges and culverts.
Cost of renewals and repairs of buildings, docks and shop machinery.
Cost of renewals and repairs of fences, road crossings and signs.
Cost of renewals and repairs of locomotives.
Cost of renewals and repairs of passenger and freight cars.
Cost of renewals and repairs of telegraph.

[NOTE.—Still other items or subdivisions of the above accounts will be suggested by the needs of particular companies.]

MISCELLANEOUS STATISTICS.

Inventories.—The quantity and value of the different kinds of material on hand at stated periods when inventories are taken.
Number of employes of various classes, wages paid, average per diem, etc. (The government requires such statistics; they have no value to employes.)
Number of accidents from various causes to employes, passengers and others.

Characteristics of Road.—Under this head may be given the most varied statistics in reference to property, such as number and location of buildings and structures of various kinds; number of bridges and trestles, location, length and style of structure, etc.; number of tunnels, location, size and kind of construction; particulars in regard to fences; miles of telegraph wire; number of overhead bridges; length of curved and straight line of road; length of grades, levels, where located, etc.

In addition to the foregoing the general manager, general superintendent, division superintendent, master mechanic, master car builder, and other heads of departments and bureaus have such statistical information furnished them as the particular exigencies of the service suggest from time to time. There are no stated formulas and can not be.

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SPECIMEN OF GENERAL LEDGER.

(NAME OF ACCOUNT).

Debit.				Credit.			
Date	Account.	Folio of general journal or cash book.	Amount.	Date.	Account.	Folio of general journal or cash book.	Amount.

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SPECIMEN OF GENERAL LEDGER JOURNAL.

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Voucher No.	Side Ledger Folio.	Gen. Ledger Folio.									
6		325	*Railroad and Transportation Companies,*					$9,393	00		
	160		*American Express Company,*			$9,393	00			$9,393	00
		370	*To Express Earnings.*								
			For amount charged for transportation of freight and messengers of the American Express Company during the month of July, 1894, upon the following named routes owned and operated by this Company, in accordance with contract of July 1, 1893, and subsequent modifications of same, for which see detailed statement on General Journal, A. N., Folio 540. Excess as per Express Company's reports on file.								
			EASTERN DIVISION:			3,423	00				
			Blank to Clairm't, 26 days at $80.00,		$2,0 0.00						
			Excess,		95.00						
			Creston to P'kville, " "	48.00	1,248.00						
			CENTRAL DIVISION:			2,645	00				
			Clairm't to Banbury, " "	95.00	2,470.00						
			Excess,		175.00						
			WESTERN DIVISION.			3,325	00				
			Banbury to Eaton, " "	75.00	1,950.00						
			Excess,		160.00						
			Oakglade to Helmsley, "	45.00	1,170.00						
			Excess		45.00						
7		168	*U. S. Post Office Department,*					21,575	00		
		372	*To Mail Earnings,*							21,575	00
			For this amount charged account of Mail service on the following named routes owned and operated by this Company during the month of July, 1894, on basis of rates of compensation, taking effect July 1, 1893, for which see detailed statement on Journal A. M., Folio 630.								
			EASTERN DIVISION:			8,000	00				
			Blank to Clairmont,		5,0 0.00						
			Creston to Parkville,		3,000.00						
			CENTRAL DIVISION:			6,500	00				
			Clairmont to Banbury,								
			WESTERN DIVISION:			7,075	00				
			Banbury to Eaton,		4,325.00						
			Oakglade to Helmsley,		2,750.00						
8		174	*Agents and Conductors,* (Gen'l ledger acct.)					75	00		
	462		*Richard Roe, Agent, Parkville,* (Side ledger account.)							75	00
		325	*To Railroad and Transportation Cos.,*								
	671		" *Columbian Railway Co.,*			75	00				
			For this amount credited to the above named agent, July 26, 1894, on General Cash Book A. 2, Folio 62, in account of "Agents and Conductors;" it should have been credited in account of "Railroad and Transportation Companies," as amount was collected by said read from Columbia R'y Co., being in payment of bill No 28746 against that Company, and to the credit of which it is by this entry transferred.								

[NOTE.—The two first entries describe the manner of making the entries for EXPRESS and MAIL traffic upon the general books of the company; the last entry is merely a specimen of a transfer entry from one general account to another; each of the general accounts having a subsidiary ledger in which the detailed accounts are kept.]

Form No. 3. [Size 46x in.]

AUDITOR'S REGISTER OF VOUCHERS, UPON WHICH ALL BILLS IN FAVOR OF PARTIES ARE ENTERED.

18__

DATE OF PAYMENT.			Treasurer's Paying No.	No. of check	Audit No.	Name.	Residence	Description of bill.	Total am't	MATERIAL AND PAY-ROLLS.			FUEL.		OPERATING.		
Month	Day.	Year								Purchasing agent.	Sundry shops and store houses.	Amount	Wood.	Coal.	Division of road.	Outside agents.	Adv'rg

[CONTINUED.]

EXPENSES. (i. e., such Expenses as are charged up directly from bills.)										TAXES.	CHARGEABLE TO R. R. COMP'S.		GENERAL LEDGER ACCOUNTS.		Overcharges to shippers.	Tickets redeemed.	Excess fares refunded.	MISCELLANEOUS	
								Sundry accounts (to be specified by name).			Name of road.	Amount.	Name of account.	Amount.				Name of account.	Amount.
								Name.	Am't										

FORM NO. 4.
[Size 41 x in.]

AUDITOR'S REGISTER OF BILLS AGAINST INDIVIDUALS AND CORPORATIONS.

_____ 18__

Folio ledger.	Audit number.	Name.	Residence.	Description of bill.	Total amount.	MATERIAL.		Premium.	FUEL.	
						Name of account.	Amount.		Wood.	Coal.

[CONTINUED.]

OPERATING EXPENSES.				Divisions of road and sub-acc'ts.	Miscellaneous earnings.	General accounts.	Overcharges to shippers.	Tickets redeemed	Excess fares refunded.
*	*	Sundry Accounts (to be specified by name).	Amount.						

*The names of such sub-accounts of operating expenses may be inserted in these columns as are warranted by the number of items credited thereto. Other columns may be added as required.

FORM No. 5.
(Size 8½ x 14 in).

DISTRIBUTION BOOK FOR VOUCHER AND BILLS REGISTERS.

*Month of*_____ _____189___ FOLIO OF DISTRIBUTION BOOK_____

	NAME OF ACCOUNT.	Journal from which entry is made.	Debit.	Credit.	BALANCE. Debit.	BALANCE. Credit.	Folio disbursement ledger.
	RENEWAL OF RAILS.						
	Division.	Audited Accounts Various Persons. Railroad Co's.					
	"	Audited Accounts. Various Persons. Railroad Co's.					
	"	Audited Accounts. Various Persons. Railroad Co's.					
	RENEWAL OF TIES.						
	Division.	Audited Accounts. Various Persons. Railroad Co's.					
	"	Audited Accounts. Various Persons. Railroad Co's.					
	"	Audited Accounts. Various Persons. Railroad Co's.					

Form No. 6.
[Size 11¼x17¼ in.]

DISBURSEMENTS LEDGER.

(Name of Account entered here.)

Date.		Sources of charges or credits. Name of account, shop or storehouse, etc.	Folio distribu'n material book.	Folio distribu'n labor book.	Amounts entered on distribution of material book			Amounts entered on distribution of labor book.			Total material and labor.			Grand total.		

NOTE.—In the few cases where *Credits* occur, the same should be entered in red ink; the credits should be subtracted from the debits or *vice versa*, and the balance carried into the total column.

As many ledgers of this character can be kept as may be necessary; ordinarily, two will be all that will be needed; one including the accounts with operating expenses, a separate account being opened for the expenses of each division, and the other for the material, construction, and miscellaneous accounts.]

FORM No. 7.
[Size 11½x18 in.]

(Subsidiary Journal.)

AGENTS' TICKET JOURNAL.

Amount chargeable Agents for Local Ticket, Local Interline Ticket Sales, and Collections for Extra Baggage for Month of _____ *18*____

Names of agents.	Amount local ticket sales.		Amount local coupon sales.		Total amount.		Folio of ag'ts and cond't'r's ledger.	Collections for extra baggage.	

FORM No. 8.
[Size 11½x18 in.]

(Subsidiary Journal.)

CONDUCTORS' JOURNAL.

Amount due from Conductors for Cash Fare and Parlor Car Collections for Month of _____ 189___

Names of conductors.	Total amount due from conductors.	Folio of agents' and conductors' ledger.	Names of conductors.	Total amount due from conductors.	Folio of agents' and conductors' ledger.

FORM 9.
[Size 15 x 19 in.]

(Subsidiary Journal.)

AGENTS' FREIGHT JOURNAL.

Amounts due from Agents for Collections from Miscellaneous Sources, and Freight Balances with Agents for Month of _____ 189

Name of agents.	FREIGHT EARNINGS.										Folio of agents' and conductors' ledger.
	Amount collections for loading, unloading and transferring cars, switching, storage, dockage, car service, etc. 1	To amount miscellaneous prepaid charges freight forwarded. 2	To amount interline charges prepaid freight forwarded. 3	To amount local prepaid charges freight forwarded. 4	To amount miscellaneous unpaid charges freight received. 5	To amount advanced charges freight received. 6	To amount local unpaid charges freight received. 7	Total amount to debit. 8	By amount interline charges prepaid freight received. 9	By amount advanced charges freight forwarded. 10	By amount charges advanced on freight forwarded. 11	BALANCE.* (Dr. in black ink.) (Cr. in red ink.) 12	

* Only the *Balances* with Agents on account of *Freight* business are posted to the ledger; the information contained in the other freight columns, however, is required in examining and correcting the Station Agents' monthly balance sheets.

FORM NO. 10.
[Size 10½ x 17½ in.]

(Subsidiary Journal.)

RAILROAD AND TRANSPORTATION COMPANIES' TICKET JOURNAL.

*For the month of*_____189____

Names of railroad companies and transportation lines.	Folio of Railroad Co.'s ledger.	DEBIT.				CREDIT.			
		Amounts due from companies below for this company's proportion of their sales.			Total.	Amounts due to the companies below for their proportion of this company's sales for current month.		Total.	
		Month	Ticket sales.	Excess baggage		Ticket sales.	Excess baggage		

[NOTE.—The number of the General Ledger Journal and the folio thereof to which the totals of this subsidiary journal are posted are entered on this journal just below the aggregate footings for each month.]

FORM No. 11. (Subsidiary Journal.)
[Size 12x16 in.]

RAILROAD AND TRANSPORTATION COMPANIES' FREIGHT JOURNAL.

Freight Balances with Railroad and Transportation Companies for Month of _____ *18*____

Folio of Railroad Co.'s ledger.	Names of railroad companies and transportation lines.	Net debit balance.			Net credit balance.		

FORM No. 12. (Subsidiary Journal.)
[Size 14x19 in.]

RAILROAD AND TRANSPORTATION COMPANIES' CAR MILEAGE JOURNAL.

Car Mileage due from and to Railroad and Transportation Companies, for month of _____ *189*

Names of companies.	Folio of Railroad and Transp. Co.'s ledger.	CAR MILEAGE EARNINGS.		
		Amounts due from Railroad and Transportation Co.'s.	Month in which cars were used by Railroad and Transportation Co.'s.	Amounts due to Railroad and Transportation Co.'s, for month named above.

[NOTE.—Two tables, similar to the foregoing, are inserted on one page.]

FORM NO. 13.
[Size 14⅛x18⅛ in.]

(Subsidiary Ledger.)

RAILROAD AND TRANSPORTATION COMPANIES' LEDGER,

EMBRACING ALL ACCOUNTS WITH OTHER COMPANIES EXCEPT MISCELLANEOUS ACCOUNT.*

(Name of railroad or transportation company entered here.)

_____ ACCOUNT.		_____ ACCOUNT.	
DEBIT.	CREDIT.	DEBIT.	CREDIT.

[NOTE.—This ledger, though ruled and arranged the same as an ordinary ledger, provides for the keeping on one page of two distinct accounts with a particular railroad; for example, the "ticket" and "car mileage" accounts.]

*A separate ledger is provided for the Miscellaneous Accounts. See specimen on next page.

FORM No. 14.
[Size 21x17 in.]

(Subsidiary Ledger.)

RAILROAD AND TRANSPORTATION COMPANIES' LEDGER OF MISCELLANEOUS ACCOUNTS.

(Name of Railroad or Transportation Co. entered here.)

DEBITS.									CREDITS.							
Date of charge	Particulars of charge.	Folio of cash book or journal	Foreign claim No.	Our claim No.	Date paid	Items charged from audited register	Items charged from R. R. Co.'s bill register	Total debits	Date of credit.	Particulars of credit.	Folio of cash book or journal	Foreign claim No.	Our claim No.	Date paid	Items	Total credits.

[NOTE.—Frequently an aggregate amount upon the Railroad Companies' Ledger, affecting the miscellaneous accounts that are constantly arising between different railroad companies, will embrace many items which will not all be adjusted and paid at the same time; hence arises the necessity of this book giving the details of each aggregate item charged in Miscellaneous Accounts; as fast as these details are adjusted the fact is noted in the column headed "Paid;" all items against which there are no notations are, of course, unpaid.]

FORM No. 15.
[Size 11¼x16¼ in.]

RECORD BOOK OF ADVANCED CHARGE CHECKS or DRAFTS ON THE TREASURER

outstanding unpaid _____ *18*___, *drawn by* _____ *Agent.*

Date.	Number.	Amount.	REMARKS.

[NOTE.—Three tables, similar to the foregoing, can be inserted on one page.]

FORM No. 16.
[Size 15x15¾ in.]

GENERAL CASH BOOK.

Record of Cash Received this_____day of_____18____

Cash, Dr.

Folio of ledger.	Name.	Nos. of remittances.	Explanation of account.	From agents, conductors and paymasters.	From railroad and transportation companies	From various persons.	From land department.	Miscellaneous income.	Miscellaneous (general ledger accounts.)	Total cash receipts.

[NOTE—For Credit side of this Cash Book see next page.]

Form No. 16—Continued.
[Size 13⅛ x 16⅝ in.]

GENERAL CASH BOOK.

Record of Cash Disbursed this *day of* _ *18*

Cash Cr.

Folio of ledger.	Name.	Treas. No.	Audit No.	Explanation of account.	Paid account audited accounts.	Paid railroad and transportation companies.	Paid various persons.	Paid agents, conductors and paymasters.	Paid agents' drafts on treasurer.	Miscellaneous (general ledger accounts.)	Total cash disbursements.

[Note.—For Debit side of this Cash Book see preceding page.]

FORM No. 17.
[Size 38x18½ in.]

RECORD OF CASH RECEIVED FROM AGENTS AND CONDUCTORS on the Dates specified in Headings during the Month of _____ *18*____

Stations.		Name of agent or conductor.	1st.	2d.	3d.	4th.	(And so on, a column being provided for each working day in the month.)	Total for month.	Folio of station agts' and conductors' ledger.		Name of agent or conductor.
	1									1	
	2									2	
	3									3	
	4									4	
	5									5	
	6									6	
	7									7	
Total,											

[NOTE.—The *special* remittances made direct to the Treasurer should be interlined, opposite the Agent's name, in red ink. These remittances should be footed separately.]

FORM No. 18.
[Size 16½ x 16 in.]

AUDITED ACCOUNTS CASH BOOK.

18

Name of payee.	Treasurer's number.	Audited number.	What for.	Amount (audited accounts.)	Name of payee.	Treasurer's number.	Audited number.	What for.	Amount (audited accounts.)

Form No. 19.
[Size 28 x — in.]

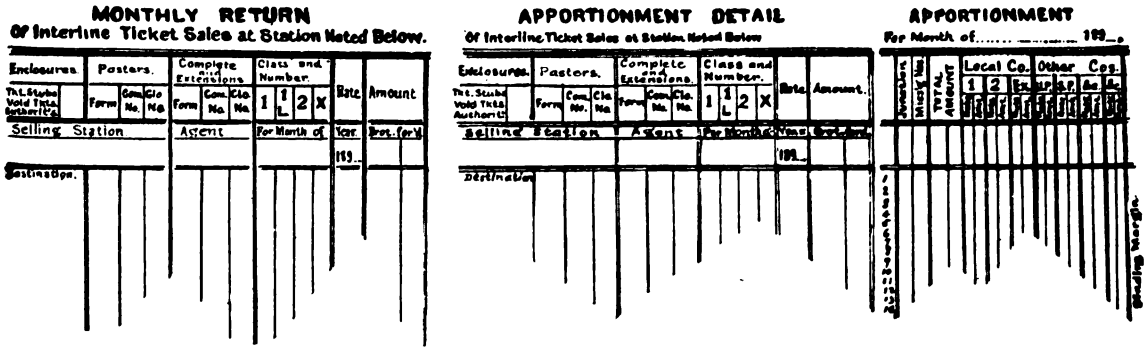
LOCOMOTIVE REPORT.

Number of engine.	Names of engineers.	MILES RUN.						FUEL.		OIL, WASTE & TALLOW.			Engineers, firemen, dispatchers and wipers.		
		Number of miles run on passenger trains.	Number of miles run on freight trains.	Number of miles run on gravel trains.	Number of miles of switching.	Total miles run.		Tons of coal used.	Cords of wood used.	Cost of fuel.	Pints of oil used.	Pounds of tallow used.	Pounds of waste used.	Cost of oil, waste and tallow.	Cost for engineemen and firemen.	Cost for dispatchers and wipers.	Cost for engineemen, firemen, dispatchers and wipers.

[CONTINUED.]

| COST OF REPAIRS. | | | | | COST PER MILE RUN. | | | | | | | | | | | | | | | | |

FORM No. 20.



[NOTE.—The above is a return and record of interline ticket sales and apportionments. As explained elsewhere, it is made by pasting the apportionment detail, which is written up by the agent simultaneously with his monthly return, upon the apportionment sheet as illustrated above. The reverse side of both forms is ruled to provide additional columns for inserting the divisions creditable to other companies. When two sheets, therefore, are laid side by side in the reverse order, they supplement each other, and furnish ample space for all the divisions required. When the work of making the apportionment is completed, summarized and balanced, the monthly returns to other companies are made; after which the sheets are bound in stiff covers and filed away for future reference.]

FORM No. 21.

AMERICAN RAILWAY COMPANY.

ACCOUNTING DEPARTMENT.

TICKET AUDITOR'S OFFICE.

STATEMENT OF INTERLINE TICKET SALES

On account of the _____ *R. R. Co.,*

during the month of _____ *189*____

_____ TICKET AUDITOR.

	From	To	Form.	Consecutive Nos.		Class and No. sold.				Through rate.	Proportion.	Amount.
				Com.	Clos.	1	1 L	2	Ex			
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
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26												
27												
28												
29												
30												
31												

FORM No. 22.

COLUMBIAN RAILROAD COMPANY.

ACCOUNTING DEPARTMENT.
TICKET AUDITOR'S OFFICE.

STATEMENT OF INTERLINE TICKET SALES

On account of the _____ R.R.Co,
During the Month of _____ 189__.

Ticket Auditor.

FROM	TO	FORM	Consecutive Nos. Com'g	Consecutive Nos. Clos'g	Class and No. Sold. 1	1½	2	Ex.	Through Rate.	Proportion.	Amount

RECORD AND APPORTIONMENT OF OTHER COMPANIES' TICKET SALES

As Returned and Charged in _____ 189__.

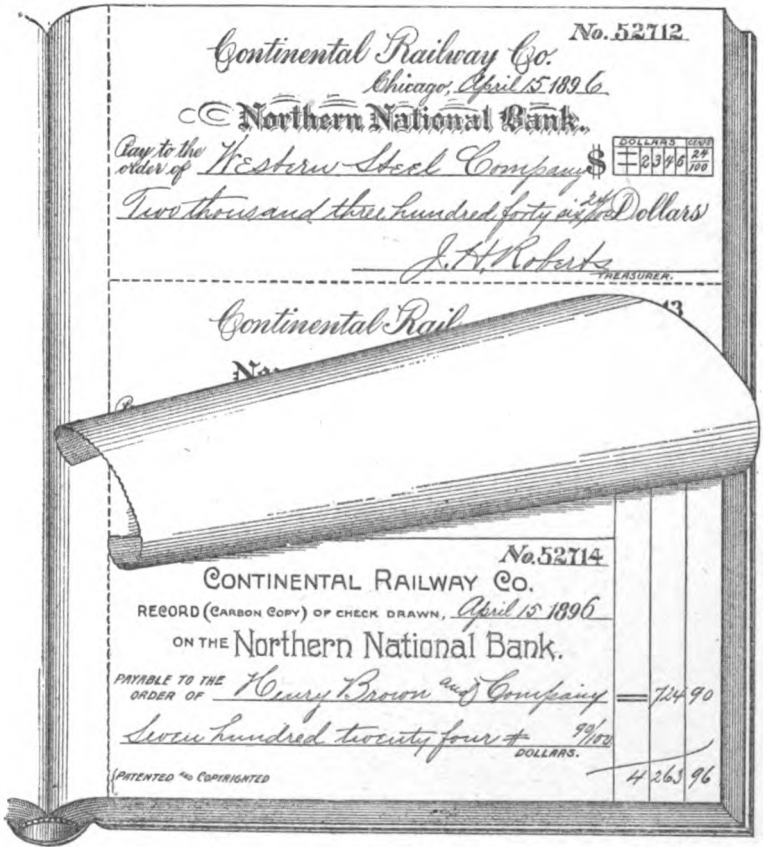
Ticket Amt.	Missing Nos.	Carried From	Carried To	DIVISION. X	Y	Z	EXCHANGED. 1	½	Coupons	Amt.	Commission	Amt.	Transf. Agt's	Amt.

Binding margin

[NOTE.—The above is a record of passenger traffic received from other companies. It is made by pasting the monthly statements of ticket sales, received from other companies, upon the record and apportionment sheet. The headings of this sheet indicate the character of the record. The section headed "Division" will, of course, not be needed by small roads. It is only required by companies which embrace several smaller lines having separate management, in one system. In such cases the entire traffic is usually reported to the headquarters of the system and there divided between the lines in interest in the manner indicated—X, Y and Z representing the respective companies. Half of the record is printed on one side of the sheet and half on the other, with the margin for binding as indicated. By laying two sheets side by side and reversing them, they supplement each other, as shown above, and when bound at the close of the month, bring the statements always to the left, the most convenient place for reference.]

Form No. 23.

KIRKMAN'S BANK CHECK AND RECORD THEREOF.


No. 52712
Continental Railway Co.
Chicago, April 15 1896
Northern National Bank.
Pay to the order of Western Steel Company
DOLLARS CENTS
2346 24/100
Two thousand three hundred forty six 24/100 Dollars
J. H. Roberts
TREASURER.
Continental Rail
No. 52714
CONTINENTAL RAILWAY Co.
RECORD (CARBON COPY) OF CHECK DRAWN, April 15 1896
ON THE Northern National Bank.
PAYABLE TO THE ORDER OF Henry Brown and Company
724 90
Seven hundred twenty four 90/100 DOLLARS.
PATENTED & COPYRIGHTED
4 263 96

This device affords a safeguard not attainable in any other way. By the introduction of a carbon sheet between the Check and Record both are filled up simultaneously, and thus the name and amount on the Record must be the same as on the Check.

FORM No. 24.
[Size 8½x3½.]

PAYMASTER'S CHECK, PAYABLE TO ORDER.

PAY ROLL No. _____

This check will be honored by any Agent of the Company who has the necessary funds on hand. It is not valid unless properly signed and countersigned. It is not good for any sum exceeding $200 00, and cannot be drawn for currency or to the order of officials issuing it. It should be presented by holder for payment without delay.

CHECK No. _____

NO PROTEST.

BLANK RAILWAY COMPANY.

Check sent to _____ New York, _____ 189____

To the BLANK NATIONAL BANK New York.

DOLLARS	CENTS
	100

Pay to the order of _____ $

_____ Dollars,

In full payment and satisfaction of all claims of every name and nature, against the Blank Railway Company or Companies owned, controlled or operated by it, up to the close of the month of _____ 189____

Countersigned,

_____ TITLE.

_____ TITLE.

ENDORSEMENT TO BE PRINTED ON BACK OF CHECK.

This check is accepted by me in full payment and satisfaction of all claims of every name and nature against the Blank Railway Company, or companies owned or controlled by it, as specified in the body of the check. I also hereby acknowledge to have received the amount this check calls for.

_____

Signature of person in whose favor check is made.

FORM No. 25. Size 8½x3¼.

PAYMASTER'S CHECK, PAYABLE TO BEARER WHEN ENDORSED BY PAYMASTER.

☞Please present this check for payment without delay. It will be honored by any agent of the company who may have the necessary funds on hand. It is not valid for any sum exceeding $200.

VOID UNLESS PROPERLY SIGNED AND COUNTERSIGNED.

No._____ _____ 18__

BLANK RAILWAY COMPANY.

To JOHN SMALL, TREASURER, CHICAGO, ILL.

*Pay to*_____ *or Bearer,*

on the order of John Smith, Paymaster,

_____ 100 *Dollars* ($_____)

For Services at_____ as_____

for the month of_____ 189__

Countersigned, _____ TITLE.

Signature, _____ TITLE.

INDEX.

This volume is carefully Indexed, but for the convenience of the reader and to render the book easier to handle, the Index is included (with a full Index of the whole work) in volume Twelve under the title "GENERAL INDEX." This "GENERAL INDEX" is also, in a measure, an Encyclopedia of Railway Knowledge.

In all previous editions of the work each volume contained an Index, but as this was already embraced in the Twelfth Volume, it has been determined to change it in this edition (as indicated above) thus reducing the bulk of each volume, and making it more convenient for the reader to handle.

THE SCIENCE OF RAILWAYS

By MARSHALL M. KIRKMAN.

"The Science of Railways" Describes the Methods and Principles Connected with the Organization, Location, Capitalization, Construction, Maintenance, Operation and Administration of Railroads.

IN TWELVE VOLUMES, COMPRISING BOOKS ON

Railway Equipment.
Railway Organization.
Financing, Constructing and Maintaining.
Train Service.
Passenger, Baggage, Express and Mail Service.
Freight Business and Affairs.
Disbursements of Railways.
  Economical Purchase, Care and Use of Material.
  Fiscal Affairs; Expenditures.
Economic Theory of Rates; Private versus Government Control of Railroads.
Fiscal Affairs; Collection of Revenue.
  Principles Governing Collection of Revenue.
  Fiscal Duties of Agents and Conductors.
General Fiscal Affairs.
  General Fiscal Affairs and Statistics.
  Payment of Employes of Railroads.
  Treasurer's Office.
  The Relief Department of Railroads.
Origin and Evolution of Transportation.
Engineers' and Firemen's Manual—General Index.

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"An able and interesting work. . . . I am not at all surprised at the thoroughness with which the work has been done, coming from the pen of Mr. Kirkman, as it is only in harmony with the completeness manifested in all his efforts and in all he does."—A. N. Towne, late Vice-President and General Manager, Southern Pacific Railway Company.

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PUBLISHED BY
The World Railway Publishing Company,
Chicago, Ill.

PARTICULARS IN REGARD TO THE SALE, DELIVERY, PAYMENT, ETC., OF THE

"SCIENCE OF RAILWAYS."

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